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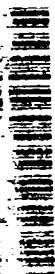S D
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MEASURING CUSTOMER SATISFACTION: PRACTICES OF LEADING MILITARY AND COMMERCIAL SERVICE ORGANIZATIONS

Thesis

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MEASURING CUSTOMER SATISFACTION:

PRACTICES OF LEADING MILITARY

AND COMMERCIAL SERVICE ORGANIZATIONS

THESIS

Presented to the Faculty of the School of Logistics and Acquisition Management

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Requirements for the Degree of

Master of Science in Systems Management

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Abstract

This research effort studied the customer satisfaction programs of six quality award winning service organizations in the military and commercial sectors. The purpose of the study was to assess the applicability of a general set of guidelines on measuring customer satisfaction for service organizations. This study discusses customer satisfaction, the importance of measuring customer satisfaction, guidelines regarding customer satisfaction, and the common practices of award winning service organizations. This study found that the common practices among service organizations provide support for the establishment of a general set of guidelines for measuring customer satisfaction. Universally applicable guidelines are listed and situationally dependent guidelines are discussed to allow customer satisfaction practitioners to rationally apply these guidelines to their organizations.

MEASURING CUSTOMER SATISFACTION: PRACTICES OF LEADING MILITARY AND COMMERCIAL SERVICE ORGANIZATIONS

I: Introduction

Background

Today's business environment is significantly more competitive and service oriented than the business environment of only twenty years ago. Competition in the marketplace has changed from a mainly national to an international nature. Some of the identifiable reasons for this increase in competition on an international level are:

- Improved transportation and communication networks
- A reduction in trade barriers
- Universal access to both basic and advanced industrial know-how and technology
- A colossal increase in manufacturing output by countries outside North America
- New types of international technology agreements
- The ability of small firms to compete with larger multinationals by focusing on niche markets (1:73)

A more highly touted reason for the dramatic increase in international competition is the significant improvement of the quality of Japanese products in comparison to other Western manufacturers (2:5; 1:72). With the Japanese dominance of many sectors of the marketplace as the primary catalyst, international competition as a whole has stimulated a reassessment of North American business practices.

Coupled with the dramatic increase in international competition is the simultaneous growth in service-oriented industries. Since 1945, when 22.5 million people were employed by service-producing industries in the United States, the number of people

employed by service-producing industries in the United States grew to 72.5 million in 1985, and continues to increase annually (2:26). Much of this growth occurred in the late 1970s, with the concurrent Japanese takeover of much of the world's manufacturing market share. In addition, in many of today's high technology manufacturing companies, such as computer manufacturers, service is also a key element (2:26).

The growth in international competition and the subsequent introduction of high quality foreign products in the marketplace, combined with the growth of the service industry, led to a fundamental change in customer expectations and behavior in the mid-1980s. Customers began expecting and demanding higher quality and reliability in goods and services at a fair price (2:6). Customers even began taking companies producing low quality products to court to get their money back. The consumers message was clear: "the quality of goods and services would no longer be taken for granted" (2:6). This change in customer behavior and quality awareness became known as consumerism, and it spawned consumer interest groups that strongly influence nearly all manufacturing and service organizations today.

In the face of increased global competition and the change in consumer behavior, many companies and organizations finally turned to quality experts for advice - the same quality experts who they ignored thirty years earlier. Quality improvement programs subsequently sprouted and grew tremendously in the late 1980s and early 1990s, and the numbers continue to increase today. This tremendous growth of quality improvement programs across the nation is at least partially due to the government's recognition of the need to increase the quality and productivity of American companies. This recognition led to the creation of the highly acclaimed Malcolm Baldrige National Quality Award in 1987 to "promote quality awareness, recognize quality achievements of U.S. companies, and publicize successful quality strategies" (3:2). The Baldrige Award promotes fundamental total quality management or TQM principles that provide a framework "for continuously

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improving the quality of goods and services delivered through the participation of all levels and functions of the organization" (2:102). The impact of the Baldrige Award on American businesses has been tremendous, and businesses are increasingly embracing the tools and concepts of TQM (4:26).

As companies and organizations embrace TQM tools and concepts, they are increasingly realizing that "quality is defined by the customer, and that the customer has to be the focus of attention in quality improvement efforts" (4:26). The Baldrige Award further drives this customer-driven quality movement by placing major emphasis on customer focus and customer satisfaction. Consequently, interest in customer satisfaction measurement has grown immensely, and customer satisfaction measurement "has become a key activity for a large number of organizations" (4:26).

In parallel with the quality improvement movement in American businesses, the federal government is also changing the way it does business. Recognizing that the federal government was also in need of a quality and productivity overhaul, President Reagan initiated quality improvement efforts in the federal government with Executive Order 12637, *Productivity Improvement Program for the Federal Government*, on April 27, 1988 (2:122). With the subsequent establishment of the Federal Quality Institute and its quality awards for federal organizations later in 1988, quality improvement programs were initiated and implemented throughout many government organizations and especially in the military. From 1988 through early 1993, government quality improvement programs matured and tangible benefits were realized. In the Summer of 1993, however, quality improvement and customer focus in federal government received renewed attention through Vice President Gore's *National Performance Review*. Soon after the report was released, Congress passed and the President signed the Government Performance and Results Act of 1993, and President Clinton issued Executive Order 12862, *Setting*

Customer Service Standards. Through this Act and Executive Order, quality improvement and customer focus became law.

To comply with these new laws, government organizations must now measure customer satisfaction and report the results to the President. This requirement has spawned a government interest in measuring customer satisfaction that rivals that of commercial industry. But government organizations are finding, as commercial organizations have, that customer satisfaction measurement is not a simple, clear-cut undertaking. While there is a consensus in the quality improvement and marketing communities about the "importance of tracking and monitoring customer satisfaction, problems arise in defining what customer satisfaction is and how to go about measuring it" (4:26). Thus, government and commercial organizations alike lack clear guidance for developing and implementing customer satisfaction measurement programs.

Problem Statement

From the discussion above, it is clear that both commercial and government organizations need guidance in measuring customer satisfaction. More specifically, practitioners in commercial and government organizations need information that will provide a clear understanding of the nature of customer satisfaction and guidance in developing and employing customer satisfaction measures and methods in their organizational-specific environments. One such practitioner is the Space Test and Experiment Program Office of Space and Missiles Center (SMC/CUC). SMC/CUC is in the process of instilling a customer orientation within the organization as part of its overall Quality Air Force (QAF) effort. To meet this objective, SMC/CUC has formed a Customer Service Office which is charged with the responsibility of serving as the *Air Force Single-Face-To-[the] Customer for all Space Development Test and Evaluation* activities (5:2). One of its key functions is measuring customer satisfaction. Although SMC/CUC has a method in place to address this function, it is not certain that it is an

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effective way to measure customer satisfaction. Thus, SMC/CUC has requested assistance to answer the question: "What is the best way to measure customer satisfaction?" (5:2) This research attempts to answer this question through an examination of the literature related to customer satisfaction and a case study investigation of the customer satisfaction measurement practices of quality award winning service organizations.

Research Questions

The following questions guided this research effort:

1. What is customer satisfaction? What are its characteristics or parameters?

2. Why measure customer satisfaction?

3. Are there preconditions to measuring customer satisfaction?
   If so, what are they? Why?

4. What are the characteristics of an effective customer satisfaction *measure*?

5. What are the characteristics of an effective customer satisfaction measurement method?

6. What common practices do qu litv award winning organizations use in measuring customer satisfaction?

7. How well do these common practices in measuring customer satisfaction agree with the guidelines for measuring customer satisfaction?

Scope of Research Effort

Because many government organizations are just beginning to develop their customer satisfaction measurement programs and because customer satisfaction measurement is situationally and contextually dependent, this research effort focuses on customer satisfaction measures and methods development and employment rather than on evaluation. This research was descriptive in nature and attempted to identify best

practices of customer satisfaction measurement in quality award winning service organizations that could be used by practitioners as guidelines for development of customer satisfaction measurement measures and methods.

The research is limited to the customer satisfaction measurement experiences of the six service organizations studied, and may not be generally applicable throughout all commercial or government nonmanufacturing environments or to manufacturing organizations. In spite of these limitations, the results of this research still benefit service organizations seeking guidance in customer satisfaction measurement because they report customer satisfaction best practices of some of the leaders in the field, the context of the best practices identified, and the comparison of the best practices to the guidelines identified in the literature.

Assumptions

A major assumption of this research is that organizations measure customer satisfaction as part of a organization-wide continuous quality improvement effort. Consequently, it is assumed that any organization measuring customer satisfaction will have a mature and effective continuous quality improvement program, and that the organization will use the customer satisfaction data to improve customer satisfaction and improve operational processes. The third assumption of this research is that quality award winning organizations are the most likely organizations to have effective customer satisfaction measurement programs. Finally, it is assumed that the quality award winning organizations studied in this research have mature and effective continuous quality improvement programs in place.

Key Terms

The following terms are defined with regard to measuring quality and customer satisfaction in service organizations and serve as a knowledge base and point of reference for the remainder of the research.

Quality is defined by the customer as *fitness for use* or "how well the product or service performs its intended function" (2:10). This fitness-for-use definition of quality is "driven by customer satisfaction, and has become the principal definition of quality from a managerial perspective" (2:10). It can be further broken down into expected quality and perceived quality. *Expected quality* is "what the customer assumes will be received from the product [or service] as a reflection of the customer's needs" (2:148). *Perceived quality* is 'the customer's measure of satisfaction in the product, the 'feel' for its quality" (2:148).

Measurement is defined as "the act of quantifying the amount of a characteristic that an item possesses" (2:423).

Metric is defined as "a measurement made over time, which communicates vital information about the quality of a process, activity, or resource" (6:2-1).

External Customer is the ultimate user or purchaser or a product or service.

Internal Customer is the individual or department within the organization that receives the output of another individual or department within the organization.

Benchmarking is defined as "measuring your performance against that of best-in-class companies, determining how the best-in-class achieve those performance levels, and using the information as a basis for your own company's targets, strategies, and implementation" (7:28).

Chapter Summary

Commercial and government organizations are striving to continuously improve quality and organizational processes as a means to compete in a highly competitive

marketplace and to increase the efficiency of business operations. Because the customer defines quality for the organization, customer focus in general and customer satisfaction in particular are major drivers in continuous improvement. Continuous improvement requires measurement of customer satisfaction, but no clear guidance exists for developing and employing customer satisfaction measurement measures and methods. This research effort attempted to provide this type of information through a case study analysis of the customer satisfaction measurement practices of six quality award winning service organizations.

The chapters that follow describe and discuss the research effort and present the results and conclusions. Chapter two reviews the literature related to customer satisfaction and examines the definition of customer satisfaction, preconditions to measuring customer satisfaction, guidelines for customer satisfaction measurement measures and methods, and customer satisfaction measurement methods currently in use in the marketplace and in government. Chapter three describes the methodology of the research, including selection of the six quality award winning organizations, development of the research questionnaire, data collection procedures, and data analysis. Chapter four reports the findings of the research at an overall organization level, a customer satisfaction measurement program level, and at a customer satisfaction measurement method level. Customer satisfaction measurement best practices are identified and reported and the environmental context of these practices are reported as well. Finally, chapter five presents conclusions and recommendations for further research.

II. Literature Review

Introduction

As noted in chapter one, quality and customer focus are becoming the norm rather than the exception in the 1990s. Product and service based companies are realizing that they must have customer focus and improve quality in order to survive in today's highly competitive global marketplace. Government is also pursuing quality improvements and customer focus under reforms based on Vice President Gore's *National Performance Review*. As part of customer focus efforts in their quality improvement programs, many companies and organizations are actively addressing customer satisfaction. In developing their customer satisfaction programs, many are looking to the "best in the business" or quality award winners for guidance in measuring customer satisfaction. This thesis addresses this matter directly with an examination of the customer satisfaction programs of six quality award winners.

Before examining how quality award winning organizations and companies address customer satisfaction, one first needs a thorough understanding of the construct of customer satisfaction, why one measures it, and the methods available for measuring it. This chapter provides the necessary information to establish an understanding of the fundamentals of customer satisfaction. Specifically, through a review of the literature, this chapter establishes the need to measure customer satisfaction, addresses the recent changes in the definition of customer satisfaction, presents preconditions to measuring customer satisfaction, and examines and compiles general guidelines for customer satisfaction measurement methods and measures. Furthermore, it examines all of the customer satisfaction measurement methods in use today and discusses their advantages and disadvantages. Finally, it establishes the need to use multiple methods to measure customer satisfaction.

Why Measure Customer Satisfaction?

Many articles have appeared recently on the subject of customer satisfaction, and seemingly all of the article introductions make statements to the effect that customer satisfaction is today's biggest issue in the quality improvement movement and in business as a whole. Recently, Ehterington said that "More than ever before, satisfying customers demands the attention of senior executives" (8:128). Whiting quotes surveys of top management such as a recent *Electronic Business* survey of chief executive officers, in which 89% felt that customer satisfaction measurement was their top near-term management imperative (9:73). Bitner even goes as far as saying that improving customer satisfaction is one of the most important challenges facing businesses in the 1990s (10: 32). Hayslip notes that, in the 1990s, customer satisfaction has "become an essential component of quality management activities in many U.S.-based manufacturing and service companies" (11:83). Customer satisfaction measurement through customer satisfaction surveys has grown accordingly. Two years ago, a study estimated that "customer satisfaction survey work alone accounts for $100 million in consulting/research revenues for major U.S. market research firms" and was likely to increase even more in the future (11:83). Why is this so?

The answer is simple: profit. Case after case and study after study shows that higher customer satisfaction leads to higher profit. Connellan and Zemke cite the cases of Marriott and IBM where Marriott found that "each percentage point increase in the customer satisfaction measure-of-intent-to-return was worth some $50 million in revenues" and IBM's AS/400 computer manufacturing site learned that "a one percent increase in customer satisfaction was worth $257 million in additional revenues over the ensuing five years" (12:3).

Harris notes that "customer satisfaction can't be directly quantified on a corporate balance sheet, but it is definitely one of the most significant corporate assets a firm can

possess" (13:5). Roberto C. Goizueta, chairman of The Coca-Cola Company, agrees and says that consumer satisfaction is his company's "most valuable asset" and the "most valuable asset of any successful company" (14:34). Peterson and Wilson point out that customer satisfaction is not just a profit maker, but is really the primary goal of any business. According to Peterson and Wilson:

> For a business to be successful in the long run, it must satisfy customers, albeit at a profit. Indeed, it can be argued that satisfying customers is the primary *obligation* of a company. Hence, customer satisfaction is a defensible and appropriate company objective - the glue that holds various corporate functions together and directs corporate resource allocation. Conceptually, virtually all company activities, programs, and policies should be evaluated in terms of their contribution to satisfying customers. (15:61)

Hanan and Karp agree as noted in the opening remarks of their book with the statement: "Customer satisfaction is the ultimate objective of every business: not to supply, not to sell, not to service, but to satisfy the needs that drive customers to do business" (16:xi). The Department of Defense, too, recognizes that the customer defines quality and that the organization exists to satisfy the customer. According to the DOD TQM implementation guide:

> The customer defines the purpose of the organization and every process within it. Success means striving to become the best supplier or your particular products and services in the minds of those customers. To achieve that success, your organization must align its overriding strategic vision with a vision of customer service and satisfaction. (17:2-12)

With such evidence, it is a wonder that any company can survive today without explicitly and actively addressing customer satisfaction in the course of daily business. However, many companies and organizations are only now starting to address customer satisfaction and to search for guidance on how to go about doing it (4:26).

The reasons for measuring customer satisfaction can be categorized along three lines: customer behavior, increased competition, and governmental reform. Customer behavior provides a strong impetus to measure customer satisfaction. Ignoring it can

actually lead to bankruptcy. It is widely acknowledged throughout the literature that today's customers expect higher quality in products and services and have a much lower tolerance for poor service and goods (2:5; 4:26; 9:73; 21:34). At the same time, they may be reluctant to complain to the provider of the product or service, but they are quite willing to share their negative experiences with their friends. The now famous Technical Assistance Research Project (TARP) studies quoted by many have shown that:

- 96% of unhappy customers never complain about rude or discourteous service.
- 90% or more of those dissatisfied with the service will not buy again or come back.
- Each one of those unhappy customers will tell his story to at least nine other people.
- Every satisfied customer will tell at least five others. (18:24-25)

- A customer must have 12 positive experiences to overcome one negative experience.
- It costs five to ten times more in resources to replace a customer than it does to retain one. (19:54)
- 90% of customers whose complaints are resolved will remain loyal. (9:73)

Other similar studies further reinforce the TARP data. Pitney Bowes found that only 20% of their "satisfied" customers said they would buy from them again, but 80% of their "very satisfied" customers said they would definitely buy from them again (20:6). An ASQC/Gallup survey obtained similar results. It found that about half who experienced a poor quality purchase did nothing to get satisfaction and that only a little more than one fourth of all customers who have an experience with poor quality are eventually highly satisfied (21:34). Connellan and Zemke cite the experience of AT&T. "AT&T reports that 10% of the customers who rate the company's service as *good* will not repurchase, and 50% of those who rate it *good* are undecided. When you drop down to *fair*, 97% of AT&T customers say they will not repurchase" (12:11). The conclusion one may draw from this evidence is that properly measuring customer satisfaction allows one to identify

problems or sources of dissatisfaction and avoid costly lost sales or damage to the company's reputation.

Lost sales and damage to reputation are indirect costs which are rarely quantified by a company's accountants, but they can be substantial. Matsushita Electric of Japan estimates that this indirect cost can be 100 times greater than the direct cost (22:917). Harvard Business School research shows that companies can increase profits almost 100% by retaining just 5% more of their customers (23). Finkelman's customer as an annuity analysis is additionally enlightening. He notes that "the life-time value of a grocery store customer and a car buyer are about the same. It's pretty scary to think about treating the person with the returned avocado badly when you realize you've just given up a car" (24:29).

With this enlightening data revealed, it is now time to look at the increased levels of competition that exist today in the marketplace as a driver for measuring customer satisfaction. When combined with the customer behavior data, the reasons for measuring customer satisfaction become even more convincing.

In the past decade, competition has increased dramatically in the market place and economies are no longer national but are international. During this time, the Japanese and the European community aggressively captured more of the world market share by providing high quality products at reasonable prices. Similarly, U.S. companies employing quality improvements and customer focus are stealing market share from those who don't (25:127) Overall, with society becoming less industrial, more technological, and more service-oriented, companies are committing to increasing customer service levels and customer satisfaction (26: 57). Companies realize that customer satisfaction is becoming the key to success since "competition is intensifying, and gaining the competitive edge is becoming more difficult" (18: 24). Government organizations such as aviation depots are also now facing competition with contractors and other government depots in the face of

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budget cutbacks (27:2-1). The days of low foreign competition and government blank checks are over. Stiff foreign and domestic competition in the marketplace are the norm and government is cutting back on spending.

Many companies are competing in this environment through quality improvement efforts based upon the guidelines of quality awards. Any company that has applied for the Malcolm Baldrige National Quality Award or Deming Prize, or uses the award criteria as guidelines to improve business practices, knows that the criteria place significant weight on customer focus and measuring customer satisfaction in particular. To win the awards, a company must measure customer satisfaction well and actually use the data from the measurements to improve the business processes. The quality award criteria for customer focus, however, are not the primary reasons for measuring customer satisfaction, but are merely a reflection of the realization that the customer defines quality and that the organization exists for the customer. Because the customer defines quality, no quality improvement effort can be successful without measuring customer satisfaction.

As noted in chapter one, the federal government has also recognized the need for improvement in the post-Cold War era. With the federal debt growing to unprecedented levels, large segments of the population demanding additional spending on health and social programs, and the public expecting proper utilization of their hard earned tax dollars, the federal government can no longer afford to be wasteful. To improve the efficiency of the federal government, many government organizations are implementing quality improvement efforts similar to those described in Vice President Gore's *National Performance Review*. Real changes are occurring and the federal government is actually starting to focus on its customer - the American people.

For the executive departments of the federal government, measuring customer satisfaction is no longer the exception but the rule. President Clinton signed Executive Order 12862- *Setting Customer Service Standards* on September 11, 1993. The order,

which is based on the recommendations made in *National Performance Review*, requires all executive departments and agencies of the federal government that provide significant services directly to the public to:

    (a) identify the customers who are, or should be, served by the agency;

    (b) survey customers to determine the kind and quality of services they want and their level of satisfaction with existing services;

    (c) post service standards and measure against them;

    (d) benchmark customer service performance against the best in business;

    (e) survey front-line employees on barriers to, and ideas for, matching the best in business;

    (f) provide customers with choices in both the sources of service and the means of delivery

    (g) make information, services, and complaint systems easily accessible; and

    (h) provide means to address customer complaints. (28:1738)

Furthermore, by March 8, 1994, each agency subject to the order "shall report on its customer surveys to the President" and use the customer satisfaction information gathered to judge the performance of agency management and make resource allocations (28:1738). By September 8, 1994, each agency subject to the order "shall publish a customer service plan that can be readily understood by its customers" (28:1738). The plan must also include customer service standards, describe plans for customer surveys, and identify how the agency benchmarked its customer service performance. The order also requests other independent agencies to adhere to the order.

This order represents a dramatic departure from *normal* business within the government (28:1737). The order requires the agencies to have customer focus and actually reward performance and allocate resources based on customer satisfaction results. Government managers now find themselves in a new position: be customer focused or find a new job. In addition to the executive order, Congress passed the Government Performance and Results Act of 1993. This law requires federal agencies to "plan strategically, develop goals that are outcome-focused, consult with their customers when

developing strategic plans, and develop performance plans that look to intended results, not just inputs and outputs" (29:6). Thus, government agencies can no longer just pay lip service to or ignore quality improvement, customer focus, and customer satisfaction. Quality improvement and customer satisfaction are now the law.

It is clear from the preceding discussion that measuring customer satisfaction is done to improve processes, to better satisfy the customer, and to add value to the product or service - not to just learn where the organization stands. This is one of the primary premises of this thesis and will emerge as the central theme of the rest of this chapter.

Now that the importance of measuring customer satisfaction has been established, the discussion turns to how to go about doing it. In discussing how to measure customer satisfaction, one first needs to know what customer satisfaction is and what factors or variables affect it. The following section reviews literature pertaining to the definition of customer satisfaction, recent changes in the definition, and the relationship between customer satisfaction and customer loyalty.

Meaning of Customer Satisfaction

From the preceding discussion, the following question arises: *What is Customer Satisfaction?* Customer satisfaction has traditionally been defined as the emotional reaction elicited when customer needs and expectations are met or exceeded (30: 27). Classical thought posits that the intensity of this reaction can directly predict consumer loyalty. Goodman, Broetzmann, and Adamson, however, have found that a significant percentage of customers who report that they are anything other than completely satisfied, choose to go with another supplier on their next purchase opportunity (31: 35). This suggests that the classical thinking on customer satisfaction and consumer loyalty is incomplete and that a possible inconsistency between the two exists when satisfaction levels are anything but the highest possible. Goodman avoids this inconsistency by including consumer loyalty in his definition of customer satisfaction. He states that

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customer satisfaction is "the state in which customer needs, wants, and expectations are met or exceeded, resulting in repurchase and continuing loyalty" (32: 37). Although Goodman's definition of customer satisfaction removes all possible inconsistencies between customer satisfaction and consumer loyalty, it fails to explain why organizations that adequately address the needs, wants, and expectations of customers occasionally fail to garner consumer loyalty.

Richard Oliver's Model of Customer Satisfaction. Richard L. Oliver's conceptual approach for understanding customer satisfaction in a retail setting provides a possible explanation for this phenomenon. In the traditional sense, Oliver views customer satisfaction to be directly related to disconfirmed expectations, or in layman's terms, the difference between experience and expectations (30:27). Where Oliver differs from traditional views of customer satisfaction is in his use of the opponent-process phenomena shown in figure 2-A. This phenomenon shows customer satisfaction as a result of two factors, disconfirmation and an internal opposition force that causes customer satisfaction to decay over time to a more stable attitude towards a company. There is to a certain extent an interrelationship between customer satisfaction and attitude as depicted in figure 2-A. A customer's previous attitude towards a company (labeled homeostasis) determines what expectations exist prior to a particular transaction. Customer satisfaction or dissatisfaction occurs when the customer judges his experience with the transaction according to these expectations. An internal opposition force, however, causes this satisfaction or dissatisfaction level to decay over time to the same attitude level as depicted here or to a new level depending on the intensity of the satisfaction or dissatisfaction event (30:31). If the attitude level changes, new expectations will be generated, which will in turn influence satisfaction or dissatisfaction with future transactions.
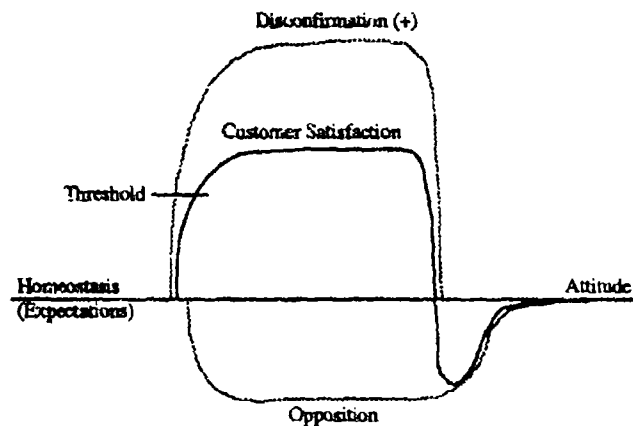
FIGURE 2-A: Operation of Opponent-Process Phenomena as
Applied to Shopper Satisfaction and Its Determinants (paa:31)

The implications of Oliver's views on customer satisfaction and the relationship

between customer satisfaction and consumer loyalty are two-fold. First, the short lived

nature of customer satisfaction suggests that the relationship between customer

satisfaction and consumer loyalty becomes increasingly weak as time passes.

Consequently, customer satisfaction and repeat purchase decisions which generally occur

beyond the stage when customer satisfaction is the dominant effect are not directly related

(30:27). This suggests that a customer's attitude towards a company is a better predictor

of consumer loyalty. The problem with this conclusion, however, is that customer's

attitude is the aggregation of several factors in addition to customer satisfaction.

Consequently, the resolution of attitude information is much less than it would be for

specific customer satisfaction/dissatisfaction events. As a result, developing an action plan

based on attitudinal information is difficult. This makes attitudinal information of marginal

value to a company seeking to improve consumer loyalty. Although the relationship

between customer satisfaction and consumer loyalty is indirectly based on Oliver's views,

a high level of customer satisfaction will always theoretically and intuitively increase

consumer loyalty by virtue of its positive affect on the customer's attitude towards a

company. Thus, the challenge is to use customer satisfaction information to consistently achieve high levels of customer satisfaction.

This challenge leads to the second implication of Oliver's views on customer satisfaction: high levels of customer satisfaction are difficult to maintain. The reason is that high levels of customer satisfaction lead to positive shifts in a customer's attitude towards a company. This in turn generates a new set of expectations which are more difficult to satisfy. Consequently, the more successful a company was at satisfying the customer in the past, the more difficult it becomes to be successful in the future. This seems to be a Catch 22 for companies striving to continually increase customer satisfaction. Fortunately, a longitudinal customer satisfaction study conducted by LaBarbera and Mazursky indicates that as consumer loyalty increases through the accumulation of past customer satisfaction successes, the importance of achieving the same levels of customer satisfaction to generate continued consumer loyalty decreases (33:403).

LaBarbera and Mazursky's finding seems to indicate that striving for consumer loyalty should not be as difficult as it initially seems. This is generally true for consumers with a long successful history with the company, but the challenge many companies face is not maintaining their customer base, but increasing it. This requires new customers. As with repeat customers, it is reasonable to believe that a new customer's attitude towards a company changes over time. The challenge of satisfying new customers thus becomes a challenge to keep abreast with the requirements of these new customers. Judging from the wide swings in consumer tastes in the United States today, this is a formidable challenge. This challenge is especially evident when studying Noriaki Kano's approach to customer needs.

Noriaki Kano's Needs Hierarchy. Noriaki Kano provides more insight into the relationship between customer satisfaction and consumer loyalty through his views on a primary component of customer satisfaction, customer needs and expectations. Kano seemingly expanded on established content motivation theories (Maslow's need hierarchy and Herzberg's two factor theory) to establish three levels of customer needs. The levels are:

1. *Dissatisfiers*, which are those needs that are expected in a product or service. In an automobile, a radio, heater, and required safety features are examples. These generally are not stated by customers but assumed as given. If they are not present, the customer is dissatisfied.
2. *Satisfiers*, which are needs that customers say they want. Air-conditioning or a compact disc player would be examples for an automobile. Fulfilling these needs creates satisfaction.
3. *Exciters/delighters*, which are new or innovative features that customers do not expect. Antilock brakes, air bags, or collision avoidance systems would be examples. The presence of such unexpected features leads to high perceptions of quality. (2:149)

The definitions of these three levels suggest that existing needs will tend to migrate to lower levels over time and eventually end up as dissatisfiers when they become the norm in the industry (2:149). This migration greatly affects a company's efforts to satisfy the customer and elicit consumer loyalty.

One effect of this migration is that a company's ability to achieve customer satisfaction and repurchase motivation by acting on a certain factor decreases over time. As a particular need migrates down the needs hierarchy, the satisfaction of that need generates a decreasing amount of customer satisfaction. The satisfaction of that need, therefore, becomes increasingly ineffective at motivating consumer loyalty. In fact, Maslow's motivation theory states that the ability of an individual's need to motivate that individual ceases to exist once that need is satisfied (34:102). If Maslow's theory is valid, companies do not have the luxury of keeping a static view of the factors that lead to customer satisfaction and consumer loyalty. As the satisfaction of an existing need

becomes the norm, new needs emerge and redefine the opportunities to gain a competitive advantage. Companies must continually identify and satisfy these emerging needs not only to attract new customers, but to also ensure that loyal customers are not attracted by another company's promise to satisfy these motivating needs.

Although companies must continually look for new opportunities to become more competitive, they cannot afford to disregard existing needs as they migrate down and become less of a repurchase motivator. The reason is that these needs take on new role in customer satisfaction. These needs are no longer *nice to have* needs but are now *must have* needs. Maslow's motivation theory states that people will attempt to satisfy the more basic needs before satisfying higher level needs (34:103) This means that a company's ability to satisfy an emerging exciter/delighter need will seldom completely offset its inability to meet more basic (dissatisfier) needs. Thus, a service organization that fails to provide the core service promised will seldom be more attractive to customers than one that does, regardless of how pleasant it was able to make the entire experience.

An obvious conclusion from this discussion is that measuring customer satisfaction is an involved and continually evolving process. How does one address the complexities and avoid the pitfalls of establishing a viable customer satisfaction measurement program? A critical step to success is to recognize that measuring customer satisfaction is not the same as ensuring customer satisfaction.

Preconditions for Measuring Customer Satisfaction

Measuring customer satisfaction is not a stand alone process, but rather an integral part of any quality improvement effort. As a part of a quality improvement effort, there are preconditions to measuring customer satisfaction. Without these preconditions, measuring customer satisfaction is meaningless (17:2-13). These preconditions are, in many cases, linked to underlying TQM principles. As noted above, the customer defines quality and the purpose of the organization; the customer's requirements are the basis of

customer satisfaction (17:2-12). To measure customer satisfaction, one must first know who the customers are, both internal and external, and what their requirements and expectations are as well (17:2-13). Secondly, one must quantify the payback of customer satisfaction in terms of real money to obtain long-term commitment from top management and the employees (32:37). Without this commitment from top management and the employees, the customer satisfaction program (CSP) will fail (35:148). Third, the company or organization employees must be satisfied with their work and work environment. Connellan and Zemke point out that:

> Customer satisfaction is built on employee satisfaction. No company can satisfy its customers if it can't satisfy its employees. Employees tend to treat customers the way they perceive they are treated within the organization. (12:15)

Furthermore, the front-line employees who interact with the customer must be empowered to take whatever action is necessary to satisfy angry customers. They must be given the responsibility and authority to do what it takes to satisfy customers; otherwise the customer becomes further dissatisfied when the problem is not quickly resolved (24:29). As noted earlier, a dissatisfied customer leads to lost sales and damage to the company's reputation. But the empowerment must be accompanied by adequate staffing levels of personnel who are trained in interacting with and pleasing customers. Finklemann warns against empowerment without training when he says "the worst thing a company can do is empower people who don't know what to do" (24:29). Lash feels that all training must result in customer satisfaction (36:69). She points out that a company can invest large amounts of money in training employees and still not achieve customer satisfaction. To achieve customer satisfaction, the training must be based on agreed upon procedures and policies that are shaped by the companies service strategy, and be geared toward delivering superior service (36:70). She also notes that using adequate staffing levels of trained personnel leads to higher customer satisfaction levels and additional business from satisfied customers; whereas using non-trained or poorly trained part-time

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and temporary help can lead to dissatisfied customers, negative word-of-mouth advertising, and lost business (36:117).

Wulfsberg and Pulaski's action-orientation requirement for measures stems from the fact that, as discussed earlier, measurement of customer satisfaction by itself is of little value. They feel that "measurement must be part of a larger process to increase the satisfaction of customers so that they will continue to buy the product or service" (37:19). The key point of measuring customer satisfaction is that one measures to find out what is wrong with the product, service, and process and what must be done to make them better to achieve the ultimate goal: to satisfy the customer. Just collecting the satisfaction data to report to management to get a *warm fuzzy* or just to satisfy the quality award criteria is not only pointless, it may actually lead to customer dissatisfaction. Terrence Rock, the chief operating officer of Convex Computer Corporation, notes that "if you take a survey, you'd damned well be ready to do something with it" (9:77). When customers are asked to share their opinions and they do, they expect the organization to do something with that information to make the process or product better (9:78). In a way, the organization raises the customer's expectations by measuring satisfaction (15:63). If the dissatisfied customers' opinions and ideas are not acted upon, they become even more dissatisfied (9:78).

Where does all of this discussion lead? Because customer satisfaction is not a stand alone process but is an integral part of any quality improvement effort, any company or organization that measures customer satisfaction must do it within the context of its overall quality improvement effort (17:2-12). As such, the preconditions discussed above all relate to underlying quality improvement principles which can only be met if the company or organization already has a viable quality improvement program in place. Therefore, an all encompassing precondition to measuring customer satisfaction of having a mature and viable quality improvement program in place is warranted.

So far, this chapter has addressed why a company or organization must measure customer satisfaction, defined customer satisfaction, and presented preconditions to measuring customer satisfaction. In the following section, guidelines for measures and methods of measuring customer satisfaction found in the literature are presented.

General Guidelines for Customer Satisfaction Measures and Methods

Measures Guidelines. Customer satisfaction measurement is a waste of time and resources if the measures used are not capable of providing the information necessary to improve processes (31:35; 35:152). Effective measures provide insight to processes and direction for what should be done to improve performance. Insight toward customer satisfaction measures can be gained by examining the guidelines for effective metrics or performance measures synthesized and reported by Hamner and LaFleur. They found that, according to Air Force Materiel Command and Office of Management and Budget guidance, an effective metric or performance measure:

- Is meaningful to the customer and the measuring organization (both take part in development).
- Is simple, objective, understandable, and clearly defined.
- Is practical (to obtain and record).
- Is timely (frequency & value adding).
- Is repeatable, shows trends, and is not just a snapshot in time.
- Encompasses a controllable activity.
- Is action-oriented and drives the proper behavior (fixing the problem, not placing blame).
- Indicates progress towards organizational goals and objectives.(6:2-1; 38:16)

These guidelines apply to customer satisfaction measures as well as quality improvement measures because the customer satisfaction measures are quality improvement measures themselves. Other additional measures guidelines found in the literature, that apply to customer satisfaction measures in a competitive retail environment in particular, are that measures should benchmark the organization against its competition and measure the

emotional commitment of the customer (16:128; 40:6). These guidelines are discussed in the following paragraphs.

Meaningful to Customer and Organization.. Because the customer defines quality for the organization and the organization exists to satisfy the customer, it is logical that the customer be involved in developing the measures. Measures that are not meaningful to the customer and the organization are just a waste of time and resources (2-12; 35:152).

Simple, Objective, Understandable, and Clearly Defined. Hamner and LaFleur note that performance measures or metrics "should be simple enough to be understood by everyone involved in the process, including the customer" (39:2-6). Measures should also be clearly defined to facilitate understanding. As Juran points out, clearly defining measures eliminates potential disagreements over what is measured and what it means (41:76). Furthermore, because of the dynamic nature and complexity of the customer satisfaction construct, measures should be objective and clearly defined for the customer (43:38).

Practical. Practical measures make the most sense for the bottom line - cost. Measuring customer satisfaction can be an expensive undertaking, and the more efficient the measure the better. Measures that are impractical to collect or analyze in terms of time or money should be avoided or means to reduce the cost should be investigated (35:151). Juran has also pointed out the need for practicality in measurement. He refers to the practicality of measures as the "precision of measurement" (41:78). He feels that the "unit of measure should be established at the level of precision which enables us to make valid decisions from the data. To go beyond that level of precision usually adds cost without adding value" (41:78).

Timely & Repeatable. The *timely* and *repeatable and show a trend* guidelines relate to measurement reliability and validity. Numerous sources in the

literature point out that customer needs, perceptions, and expectations are dynamic and ever-changing. Measures thus need to collect current information that can be acted upon to make improvements in a timely manner (39:2-4). Similarly, the measures need to be repeated over time to show trends in the customer satisfaction so that the organization can gauge its improvement efforts to match changing customer requirements. Measures must also be repeatable in order to be reliable. Emory states that "a measure is reliable to the degree that it supplies consistent results" (42:185). Just as the process must first be known to be stable in statistical process control analysis in order to control it, the measure must be repeatable in order to use it.

Controllable Activity. Measures that do not encompass a controllable activity are ineffective. "It would be wasteful to measure a part of the process without having the authority to change it" (39:2-5). Further, measures that are not within the control of the employees can lead to frustration which can negatively impact the customer satisfaction program.

Action Oriented and Drive Appropriate Behavior. Measures that are not action-oriented yield customer satisfaction levels or degrees, but do not provide the information necessary to identify where or how to take action to improve. The whole point of measuring customer satisfaction is to improve the customer's value, but if the measures do not help to identify what to improve and how much to improve, then one doesn't know what to do to satisfy the customer (35:152).

Hamner and La Fleur report that the most important guideline for measures is that of driving the appropriate behavior (39:2-4). Appropriate behavior is "behavior that results in continuous improvement" (39:2-4). Measures that reward employees for behaviors not leading to continuous improvement and customer satisfaction are, again, a waste of time and resources (12:13). Employees will naturally behave in the manner for

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which they are most rewarded. As Connellan and Zemke point out, "Companies that preach service quality but reward something else will get something else" (12:13).

Indicates Progress Towards Organizational Goals and Objectives. Closely related to driving the appropriate behavior is tying measures to the organization's goals and objectives. When a measure is tied to the organization's goals and objectives, it provides an indication of goal achievement and actually "provides the means to achieving objectives and goals through process improvement" (39:2-6). When tied to goals and objectives, measures provide focus for the employees on what is important to the organization and what to do to meet the goals.

Benchmark Against Competitors. Measures should also benchmark the organization against its best competitors. Competitors can effect a company's customer satisfaction in three ways according to Hanan and Karp:

1   If they are less satisfying than you are, your competitors can act as inadvertent suppliers of customers to you.
2. If they are more satisfying than you are, your competitors can act as consumers of your customers by "eating your lunch".
3. If they are equally satisfying, your competitors can act to obscure your differentiation and thereby accelerate your loss of satisfaction supremacy. (16:128)

Benchmarking also identifies areas in which the organization can "exploit the competition or where it needs to guard its flank" (37:19). Benchmarking against a world-leader in a particular area, even if not in the same line of business, can provide insights on how to find a niche that can catapult an organization ahead of its immediate competitors. Evans and Lindsay identify several benefits of benchmarking:

-   The best practices from any industry may be creatively incorporated into a company's operations.
-   Benchmarking is motivating; it provides targets achieved by others.
-   Resistance to change may be lessened if ideas for improvement come from other industries.

- Technical breakthroughs from other industries that may be useful can be identified early.
- Benchmarking broadens people's experience base and increases knowledge. (2:145)

Emotional Commitment. The importance of loyalty in customer satisfaction research was presented earlier under the *Meaning of Customer Satisfaction* section. Loyalty is an important construct to measure through "emotional commitment" type measures that assess future purchasing intentions, the image of the company, and brand loyalty. As noted earlier, "satisfied" customers may not buy again, but "very satisfied" customers become much more loyal and can spread positive word-of-mouth advertising. Researchers at the University of Tennessee note that emotion is a motivator for future behaviors and its intensity is "an important characteristic of satisfaction to understand" (43:39). They also suggest that "Emotion-based measures ought to be more predictive of what consumers will do in the future than measures that do not directly indicate levels of felt emotion (e.g. satisfied-dissatisfied scales)" (43:39). Thus, measures which identify the extent of loyalty development, and the factors leading up to it, are as necessary as the action-oriented measures that identify what needs improvement.

A customer satisfaction measurement method which employs these guidelines for measures will not only provide an assessment of the level of satisfaction, it will also provide the information necessary to take action to improve the process, product, or service to increase the level of customer satisfaction. But effective measures alone will not result in a successful customer satisfaction program. They must be coupled with and employed in effective customer satisfaction measurement methods. The next section presents guidelines for effective customer satisfaction measurement methods found in the literature.

Methods Guidelines. Just as important as using effective measures is using an effective method. Effective methods measure performance against the customer's expectations and perceptions and provide the information necessary to take action to improve processes. This research uncovered numerous guidelines for a customer satisfaction measurement method in a myriad of sources. Many of the guidelines appeared in many, if not all, of the literature reviewed. They have been aggregated in the following lists:

- It should focus on customer expectations and perceptions.
- It should focus on the quality of the product or service, not on laying blame on an individual or group.
- It should involve employees in developing the customer satisfaction measures.
- It should collect both qualitative and quantitative data.
- It should be designed so that management and/or employees take action or implement change based on the results.
- It should make rewards for bringing about change based on the measures visible. (44:77-78)

- It should address internal customers as well as external customers.
- It should benchmark your organization against competitors. (45:100)

- It must be as objective as possible.
- It should be tailored to the customer (consumer or business).
- It should measure the true drivers of satisfaction.
- It should ask the customer what is important to him.
- It should post the results of the measures for all to see. (46:81)

- It should include an independent assessment periodically. (9:76-77)
- It should include measurements of a wide variety of customer types. (10:34-38)
- It should minimize the response burden for the customer. (47:567)
- It should be revised and updated periodically. (35:151)

Many of these guidelines reflect customer focus and continuous improvement principles which were discussed previously and need no further explanation here. However, some of these guidelines warrant further analysis.

Qualitative and Quantitative Measures. It is very important that the customer satisfaction measurement method include both quantitative and qualitative

measures. Quantitative measures yield numerical data for statistical analyses, and they are seen as generally more "scientific" than qualitative measures (4:27). However, Peterson and Wilson point out that quantitative measures are almost always biased and inflated due to methodological artifacts (15:69). Pedrick et al feel that "As a result, qualitative research methods should be used as an additional tool to generate insightful information to complement quantitative studies, as well as judge the representativeness of the results of these [quantitative] measures" (4:27). They further note that open ended qualitative measures lead to deeper insights into customer expectations, needs, and wants, as well as identifying actionable opportunities for continuous improvement (4:28). Connellan and Zemke provide additional insights concerning the need for both types of data:

> Good data are not just quantitative; they are also qualitative. They are the one or two sentences written at the bottom of a guest report. They are the mumbled comment of a customer walking away from the counter. They are the phone complaint about a late delivery. You need a system that captures all kinds of data, not just the numbers, and translates the data into information you can use to exceed the expectations of your customers. (12:25)

Qualitative data that provides clear indications of areas needing improvement and how to improve them come from qualitative measures such as:

- What's most important to you?
- What do you expect from a product or service like ours?
- Are these expectations being met?
- If not, where are the shortfalls?
- How does our product or service compare to the competition's?
- What do you like most? Least?
- What's the most common or most bothersome problem you face when dealing with us? How would you fix it if you were in charge here?
- What if we could .... (or, what if the product could. ..)?
- How can we make it or do it better?
- What would you like us to do differently from or in addition to what we're doing now?
- If you can change anything about our product or service, what would it be? (48:205)

The answers to these types of questions permit the company "to formulate customer-driven, actionable responses in a cost effective manner" (4:35).

Address Both Internal and External Customers. Customer satisfaction measurement methods must address internal customers as well as external customers. One of the preconditions to measuring customer satisfaction is having satisfied employees. Chandler notes that "In most manufacturing and many service companies, the majority of employees never come in direct contact with the ultimate customer. Yet, everyone of those people has a customer - an internal customer - who receives their work" (49:31). All of these internal customers have needs and expectations just as external customers do. Not only should one measure internal customer satisfaction, one should measure, address, and improve upon it before measuring external customer satisfaction. "Failure to meet the needs and expectations of internal customers can result in a poor quality product" (2:11). In this light, it is evident that it is hard to satisfy external customers without satisfying internal customers first.

Tailor the Method to the Customer. Just as important as addressing both types of customers is tailoring the method to the customer. Tailoring the methods depends on the type of customer. Using the same measures and methods on internal and external customers is inappropriate because they have different needs, perceptions, and expectations (2:10; 17:2-12). Similarly, different external customers and different types of external customers may have dissimilar needs, perceptions, and expectations. Hayslip expounds on this and identifies several differences between the consumer type and business type of customers (11:84). Hayslip's most notable differences are the size of the customer population, the magnitude of purchase volumes, purchase transaction complexities, customer knowledge of the supplier's offerings, and the nature of the customer-supplier relationship (11:85). The differences in these factors between

consumer type and business type of customers lead to tailoring the method for *business customers* in the following ways:

- Samples should be expanded to include as many customers as possible.
- Method should not lose the responses of critical respondents in the aggregation of data.
- Method must reflect the ongoing partnership between the customer and supplier.
- Method must provide actionable data that must be used to continuously improve processes to add value for the customer. (11:85-86)

Ask Customer What is Important. Another reflection of differing customer needs, perceptions, and expectations in applying customer satisfaction measurement methods is asking the customer what is important. Not only does it allow the supplier to identify potentially unnecessary measures, it identifies areas of strength and weakness for the supplier and provides clues as to what actions to take to improve. If one doesn't measure the importance of various attributes or factors, then improvements could very well be just *shots in the dark*. According to Finklemann, "If you don't know the relative importance of factors, you won't know where to put your money. And, if you don't know where to put your money, the odds are you won't get it right" (24:24). However, Bartram and Bartram believe that relying on measuring importance poses some dangers:

- it tends to produce 'motherhood and apple pie' feelings;
- everything (e.g. in financial security or airline safety) can be thought to be 'extremely' important, whilst failing to differentiate between competing suppliers;
- importance is variable over time and heavily depends on recent experiences or satisfactions;
- importance' means different things to different people; and can simply mean something that needs improved; and
- it can be related to other aspects such as the reasons for buying a product, or the degree to which a given attribute is regarded as 'essential' to have. (35:150)

Given these insights, it is evident that the method must provide the customer a clear understanding of the context of importance up front. Bartram and Bartram suggest that

the most straightforward approach is to ask customers which features are "most in need of improvement or to ask them to rank-order features" (35:150).

Conduct an Independent Assessment. Conducting an independent assessment of the organization's customer satisfaction provides a "reality check" (9:77). Having an independent research firm measure the organization's customer satisfaction ensures that the organization is collecting the right information and not biasing the data through its methodologies (9:77). Furthermore, the independent assessment provides comparative data on competitors giving the organization a clear market view of its performance. The need for periodic independent assessments is recognized by the Malcolm Baldrige National Quality Award developers and other quality awards committees and is included in the awards criteria (50:55).

Include Measurements of a Wide Variety of Customer Types. If the customer satisfaction measurement method only measures the satisfaction of a single type of customer or only a few types of customers, it will yield incomplete data at best and may actually mislead the organization into taking inappropriate action (10:33). The organization should recognize all types of customers. This includes not only the potentially widely varying strata of current customers, but past and future customers as well (10:36). An example drawn from Barsky and Labagh's research provides some insight (10:34-40). For instance, a hotel has business-traveler, pleasure-traveler, and pleasure-nontraveler types of current customers, each with different needs, perceptions, and expectations. If the hotel concentrates on satisfying only one type or two of the types of customers, then it misses out on the opportunity to satisfy all three and potentially gain market share. Similarly, the hotel has past customers who have not returned to stay at that hotel or any others within the same chain because they were dissatisfied in some way.

By asking these past customers why they do not plan to stay again, the hotel can learn the reasons for dissatisfaction and correct them before more customers are lost for the same reasons. Additionally, the hotel can ask potential future customers what attributes they expect or desire in a hotel or why they currently do not stay at the hotel. This way, the hotel can proactively modify its service or accommodations to attract additional customers. This example illustrates the need to measure the satisfaction of all types of customers. Other retail and non-retail companies and non-profit organizations obviously have different types of customers than those illustrated in the hotel example, but the arguments still apply. All companies and organizations have past, present, and future customers. By measuring the satisfaction of all three types, the company or organization can comprehensively address continuous improvement across the customer spectrum.

Minimize Response Burden for the Customer. A final point of discussion on customer satisfaction measurement method guidelines concerns minimizing the response burden for the customer by concentrating on the "true drivers" of customer satisfaction. Several researchers in the literature present arguments for the "simplicity" approach. In an *Industry Week* interview, James Taylor, CEO of Yankelovich Partners, says that "companies are over-researching the marketplace and under-thinking the process by which they conduct the research itself"(51:52). He feels methods should be kept short and concentrate on pertinent action-oriented questions, thus minimizing the amount of the customer's valuable time taken to respond(51:53). In Taylor's opinion, taking up unnecessary amounts of customer time can actually lead to damage of the customer's perceptions of the company's value(51:54).

Bartram and Bartram agree with Taylor. They feel that "The key to success is simplicity: far too may tracking surveys are lengthy and unwieldy, with insufficient focus upon the key service criteria and upon the most important service standards which need to

be maintained"(35:151). They warn against attaching general product usage and attitude questions to the key driver questions because people "never seem to delete things from a questionnaire, they continue to add to it!"(35:151) Before long, the method takes up so much of the customer's time, and the researcher has so much data to analyze, that the method becomes impractical.

Besides possibly damaging the perception of value as mentioned above, Goodmann, Boetzmann, and Ward point out that the longer the method, the lower the response rate (47:567). They feel that the methods should concentrate on the key drivers and not be used as a research tool. Adding additional research questions makes the method too burdensome for the customer, and he is less likely to respond(47:567). Low response rates are undesirable from both the research and cost points of view. As noted previously, customer satisfaction measurement can be an expensive undertaking. It is hard to convince top management that measuring customer satisfaction is worth doing if the cost of doing it is higher than the amount of benefits received.

Keeping these guidelines for measures and methods in mind, the next section presents a comprehensive overview of customer satisfaction measurement methods used in the marketplace and in government today.

Customer Satisfaction Measurement Methods

Several methods exist for a company to choose from when measuring customer satisfaction. In addition to the measures and methods guidelines mentioned above, there are operational variables that influence a company's choice of a particular method over another. They include:

- The need to reach diverse segments of the population
- Geographic coverage
- The need to know the identity of respondents for future reference
- The complexity of information required
- The amount of assistance the interviewer needs to give

- The quantity of information required
- The speed with which data has to be collected
- The funds available for collecting data (44:91-92)

The extensive nature of this list along with the measures and methods guidelines suggests there are countless ways a company may approach measuring customer satisfaction. Although this is true, customer satisfaction measurement methods in general can be categorized as either direct methods or indirect methods.

Direct Methods for Measuring Customer Satisfaction. Direct methods for measuring customer satisfaction are better known as surveys. These methods ask customers to explicitly state their level of satisfaction with a service or product in general and along several quality dimensions. Surveys are by far the most popular type of method for measuring customer satisfaction (15:61). There are a number of reasons for this popularity. The most obvious reason is that surveys are direct. There is no questioning customers' self-reports of their level of satisfaction. Another advantage of surveys is that they involve the customer in the customer satisfaction measurement process which is an effective demonstration to the customer that the organization is interested in them. The effect of this demonstration on customer perceptions is notable. Researchers have found that this demonstration in itself is likely to result in higher levels of customer satisfaction (15:61). Thus, at face value, surveys seem to be ideal methods for measuring customer satisfaction.

Written Surveys. One common survey method is the written survey. This type of survey ranges from mail-in surveys to customer feedback cards. The primary advantage with written surveys is that they are relatively easy and inexpensive to distribute. Thus, they allow a company to reach a large number of customers economically. Because there is no direct contact with the customer with written surveys, they are also not intrusive. A direct consequence of not being intrusive, however, is that

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feedback from written surveys are difficult to control since they do not provide the opportunity to clarify questions.

Another consequence is that written surveys typically have low response rates (52:249). This low response rate is an indicator of another problem associated with written surveys. The information they provide has the potential of not being representative of the views of the typical customer (44:92). The reason for this can be inferred from the earlier discussion of customer complaint behavior. Customers are typically not motivated to respond to written surveys unless they experience uncommon instances of excellent or poor service. Consequently, the views they communicate tend to be at the positive or negative extremes which are not representative of the typical customer (44:92).

Although the information written surveys provide may not be representative of the typical customer, it is valuable to the company nonetheless. It identifies factors that significantly affect customer satisfaction. In statistical process control terms, the data provided by extremely satisfied or extremely dissatisfied customers identify factors that lead to "out of statistical control" conditions. The existence of these factors requires the company to act to either address the factor leading to extremely dissatisfied customers or incorporate the factor leading to extremely satisfied customers into existing service procedures to improve the process. Thus, the information provided by written surveys continues to remain valuable to continuous improvement despite the drawback associated with low response rates. Some companies, however, have tried to address the issue of low response rates to get more representative data. One effective way to increase response rates is through the use of incentives (44:93). Response rates are also increased through the use of follow-up letters or telephone calls (52:249). The most obvious way to boost response rates, however, is to make the surveys simple to fill out and easy to return.

One must recognize, however, that simplicity often limits the amount of information written surveys are able to collect.

Telephone Surveys. One way to avoid the limitations associated with written surveys is to change the communication medium. This change leads to another survey category-telephone surveys. There are a number of advantages with using telephone surveys. One definite advantage is that the more direct form of contact with the customer leads to higher response rates than do written surveys. In addition, telephone surveys allow the company to control the quality of the customer feedback by giving company representatives the opportunity to clarify questions. Another advantage is that telephone surveys allow a more in-depth coverage of the factors that lead to customer satisfaction and facilitate the handling of complaints should they arise (52:249). Although telephone surveys are typically more costly to execute than written surveys, telephone surveys still remain a cost effective method for measuring customer satisfaction (13:72; 16:116).

Telephone surveys, however, are not devoid of drawbacks. One drawback seems to be the more intrusive nature of telephone surveys in comparison to written surveys. Although intrusiveness is considered a disadvantage for most types of research, customer satisfaction research tends to be the exception (53:39). Because customer satisfaction research is a demonstration of a company's commitment to the customer, customers are often impressed with the effort a company takes to solicit their input and tend to overlook the intrusiveness of the research (53:39). What is normally considered a disadvantage has thus become an advantage for the company. Consequently, telephone surveys are considered to be a more powerful instrument than written surveys for measuring customer satisfaction.

There are limits to the power of telephone surveys, however. Although telephone surveys allow the researcher to obtain more in-depth information, researchers must

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practice caution to avoid overburdening respondents. Telephone surveys typically cannot last longer than 15 minutes without respondent fatigue (44:92). Another limitation to the amount of information telephone surveys can gather is the inability to communicate visually to convey information (44:92). If the customer satisfaction researcher must gather more information than is possible in 15 minutes or must use visual aids to adequately communicate, then another form of communication would be more appropriate.

In-Person Interviews. A survey method that would allow more in-depth coverage and complex communication is the in-person interview. In-person interviews vary from informal one-on-one meetings with a particular customer to highly formal reviews involving a variety of customer and organization representatives. The advantages of in-person interviews are very similar to those of telephone interviews except that the effects are more pronounced (53:40). In-person interviews allow researchers to gather the greatest amount of information among the three types of surveys. They allow researchers to use all means of communication at their disposal to convey their ideas (44:92). In addition, in-person interviews demonstrate the highest level of commitment to the customer and allow interviewers to use interpersonal skills to elicit strong feedback (52:250). Given the more pronounced advantages of in-person interviews, it is clear that in-person interviews are a very powerful tool for measuring customer satisfaction.

There is one important disadvantage, however, that greatly limits the use of this tool - cost. In-person interviews are typically the most expensive type of survey (52:250). Consequently, many companies choose to use in-person interviews sparingly despite the high levels of customer satisfaction they can attain with this type of survey.

Bias of Surveys. Although the ability to increase customer satisfaction through the use of surveys seems to make surveys ideal for the task of measuring customer satisfaction, this ability lies at the heart of the problem with customer satisfaction

surveys. Because the administration of a customer satisfaction survey alters the level of satisfaction that survey participants perceive, these survey participants cease to be representative of the typical customer. In general, customer satisfaction surveys increase the level of satisfaction among survey participants. Consequently, customer satisfaction surveys tend to overstate the actual level of satisfaction that results in consumer loyalty. This finding is so prevalent among customer satisfaction surveys that Peterson and Wilson contend that "virtually all self-reports of customer satisfaction possess a distribution in which a majority of the responses indicate that customers are satisfied, and the distribution itself is negatively skewed" (15:62). These characteristics make the determination of factors that lead to customer satisfaction and consumer loyalty difficult to accurately accomplish. Moreover, the "too good to be true" scenario portrayed by customer satisfaction surveys could easily mask quality problems and lull less than diligent companies into complacency. Consequently, Peterson and Wilson conclude that "measurements of customer satisfaction are not especially informative or diagnostic, principally because of their striking distributional characteristic" (15:69).

Despite this significant disadvantage, customer satisfaction surveys are not likely to be supplanted by other types of methods. The most knowledgeable party to assess the level of satisfaction of a customer is the customer himself. Thus companies should not neglect surveys when trying to ascertain customer satisfaction levels. The key to success with surveys is to recognize the inherent limitations of customer surveys and exercise caution when using survey information to avoid the pitfalls.

Indirect Methods for Measuring Customer Satisfaction. Although the prominence of surveys for measuring customer satisfaction seems secure, companies have recognized the limitations associated with them and have utilized other methods to overcome these limitations. These methods fall into the natural alternative to direct methods for measuring

customer satisfaction, indirect methods. Indirect methods concentrate on more quantitative indicators of customer satisfaction and consumer loyalty. Consequently, indirect methods for measuring customer satisfaction allow a more objective approach to quantifying customer satisfaction and consumer loyalty.

Complaint Handling Systems. One highly endorsed form of indirect customer satisfaction measurement is the use of complaint handling systems to track the number of occurrences of dissatisfaction. The relationship between complaints and customer satisfaction seems intuitive-the fewer the complaints, the higher the level of customer satisfaction. Typical examples of complaint handling systems are complaint cards, phone-in 800 numbers, and customer service desks.

Complaint handling is a highly touted corporate function for good reason. Because complaints require no special effort on the part of the company to reach customers, complaint information is easy to collect. Because every complaint provides the company an opportunity to address a problem with a customer, complaint handling is inherently an action oriented activity. Probably the most convincing argument for a complaint handling system is that it gives a company the opportunity not only to address a problem, but also retain a customer which is a goal of any customer satisfaction measurement effort (32:38). Research has shown that a company that provides the opportunity for a customer to complain may in some cases increase consumer loyalty even if the customer is left dissatisfied (32:38). This is possible when the source of dissatisfaction is a misinterpretation of the limitations of a product or service. If the company is successful at resolving a customer's complaint, that company is assured increased consumer loyalty (32:38). Therefore, a complaint handling system provides the highest potential pay-off for the resources required to collect the complaint information.

One must exercise caution, however, when using complaint handling systems to determine the level of customer satisfaction. When viewed through Kano's needs

hierarchy, the number of complaints may be a good indicator of the level of customer dissatisfaction, but it is not a good general indicator of satisfaction or consumer loyalty levels beyond the particular individual that provided the complaint information. Although the elimination of dissatisfaction is necessary to customer satisfaction and consumer loyalty, it is not sufficient to ensure them. A company that relies solely on dissatisfaction information may find that despite its successes at eliminating dissatisfaction, it is continuously losing market share to competitors that are competing at a needs level beyond dissatisfiers.

Market Share Analyses. Perhaps a more appropriate indirect indicator of customer satisfaction and consumer loyalty is the market share a company holds in an industry. It seems intuitively obvious that consumer loyalty and market share should be positively correlated. Market share gains, after all, are the expected end results of increasing customer satisfaction and consumer loyalty. There are several forms of market share data and several methods for collecting these data. Methods vary from tracking the number of repeat customers to tracking the number of lost customers to tracking the percentage of the total market a company holds. Market share analysis holds several advantages. First, it measures the end result of any customer satisfaction effort. This removes the need to measure levels of customer satisfaction and consumer loyalty. The tracking of this information also provides valuable benchmarking data to determine the competitiveness of a company in the marketplace.

The problem with market share information, however, is that it does not provide enough resolution to be an effective diagnostic tool for charting improvement efforts in customer satisfaction. There are many more factors that could conceivably affect market share besides customer satisfaction, and market share information is the aggregate of the effects of all these factors. For example, a relatively strong economic growth in a company's region may account for that company's growth in market share. The end result

is equivalent to the result of a successful customer satisfaction effort - growth occurred, but to attribute all of that growth to the customer satisfaction effort would be incorrect. Given the poor resolution of market share information, it is better used as cross-check information to confirm that a company's improvement efforts are resulting in the desired effect. If not, market share information serves as an indicator that other factors may exist that require more immediate attention than what is currently being tracked.

Performance Based Measures. The final type of indirect method for measuring customer satisfaction is the tracking of performance based measures which are better known as quality indicators. Quality indicators vary widely among industries. Examples for service related industries are the number of on-time deliveries, the number of mishandled transactions, and the number of missed suspenses. Data on these performance based measures are easily collected through the company's internal quality control processes. The ease of using the company's quality control processes to collect customer satisfaction data is a large advantage of this method type.

Some companies, however, utilize a method in addition to their quality control processes that specifically try to collect customer satisfaction data. This anonymous or mystery shopper method involves the use of research employees who pose as anonymous shoppers to determine the quality of the service provided (13:73; 44:94). The obvious advantage this method has over typical internal quality control processes is that the service providers are unaware that their performance is being measured. Consequently, the quality of the service provided to the anonymous shopper should be representative of the service quality provided to the average customer.

Quality literature is replete with articles stating the advantages of tracking and controlling quality indicators. What these articles often fail to mention, however, is that quality indicators are tied to the customer needs they address. Consequently, they are also subject to migration along Kano's needs hierarchy. As the need which a certain quality

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indicator addresses migrates to the dissatisfiers level, the quality indicator loses its ability to accurately predict customer satisfaction. Therefore, a company must continually reassess a quality indicator's ability to predict customer satisfaction by comparing the quality indicator's trend to other customer satisfaction information. A company must also continually develop new quality indicators to address the emerging needs of the customer.

Need for a Mix of Methods

From the discussion of the several methods for measuring customer satisfaction, it is evident that there is no one method that will successfully address all the guidelines for good measures and good methods. Some methods are biased, others do not adequately measure customer satisfaction, and others do not adequately drive quality improvement. It is unlikely that there is a single method that will ever be able to meet all the requirements imposed on it. Therefore, the key to successfully implementing a customer satisfaction measurement program must be to use a mix of methods. Although no one method is adequate, a mix of methods may provide enough redundancy to avoid the many pitfalls associated with measuring customer satisfaction. Redundancy will also provide a means for validating the output of any one particular method. A cursory examination of the practices of large enterprises agrees with this assessment (44:92). Thus it seems likely that redundant forms of measuring customer satisfaction are the norm rather than the exception.

Summary

There is no denying that customer satisfaction is a key concept in industry and government alike. For industry, customer satisfaction is a necessity for the survival of the company. For the government, customer satisfaction is not only necessary but also mandatory. The question for all now becomes: "How do we define customer satisfaction?" and "How do we measure it?" Traditional definitions of customer

satisfaction seem to be inadequate. Consumer loyalty must be added to this definition to ensure that companies and government agencies alike continually seek out new requirements as the perception of the customer changes. Customer satisfaction measurement methods must also facilitate this effort. The burden imposed on the customer satisfaction measurement method by such a requirement is tremendous. It does not seem likely that a single method will ever be able to withstand this burden. Therefore, companies and government agencies must use a mixture of existing customer satisfaction measurement methods to ensure a successful customer satisfaction program.

III. Methodology

Chapter Overview

This chapter presents a description of the methodology used to conduct the research effort. The research design is presented, followed by a description of the population, sample selection criteria used, and instrument development. Procedures for data collection and data analysis are then described.

Research Design

This descriptive research effort was a cross-sectional, case study aimed at identifying best practices in measuring customer satisfaction among service organizations through an examination of the customer satisfaction measurement practices of six leading quality organizations. A cross-sectional approach was chosen over a longitudinal approach because of the limited amount of time available to conduct the research. In addition, the case study approach was chosen over a statistical study because the depth of research was more important than breadth for this study.

Two sources were used to identify best practices in measuring customer satisfaction. The first was the literature pertaining to preconditions, customer satisfaction measures and methods guidelines, and customer satisfaction methods currently in use in the marketplace and government. The second source was the customer satisfaction measurement experiences of the research sample described below.

Population and Sample

The population of interest consists of government and industry service organizations that are recognized leaders in quality improvement and customer focus. In the review of the literature, this population was found to be quite large. To narrow the scope of the research down to a manageable size, three commercial service organizations and three government service organizations were chosen as a representative sample.

Sample Selection Criteria. The selection of the six representative organizations was straightforward. Leaders in quality and customer focus are likely to be recognized for their exceptional performance. Therefore, the most appropriate criterion for identifying leading quality organizations seemed to be the receipt of a widely accepted form of recognition. Through the literature review, two awards suited to the research were identified, the Malcolm Baldrige National Quality Award and the Federal Quality Institute Presidential Award for Quality.

Malcolm Baldrige National Quality Award. The Malcolm Baldrige National Quality Award was quickly identified as a suitable criterion for identifying leading quality service organizations. A brief overview of the Baldrige Award provides insight into its suitability as a selection criterion.

The Malcolm Baldrige National Quality Award came into existence when President Reagan signed Public Law 100-107, the Malcolm Baldrige National Quality Improvement Act of 1987. The award's namesake was Reagan Secretary of Commerce at the time of his death. The purpose of the Baldrige Award is to "promote quality awareness, recognize quality achievements of U.S. companies, and publicize successful quality strategies"(54:20). Organizations eligible to receive the award fall into one of three categories: manufacturing companies or subsidiaries, service companies or subsidiaries, or small businesses (54:20). The Baldrige Award criteria promote a set of core values and concepts that "are the foundation for integrating the overall customer and company operational performance requirements" (55:2). These core values and concepts are:

- Customer-Driven Quality
- Leadership
- Continuous Improvement
- Employee Participation and Development
- Fast Response
- Design Quality and Prevention

- Long-Range Outlook
- Management by Fact
- Partnership Development
- Corporate Responsibility and Citizenship (55:2-4)

The award criteria that reflect these core values and concepts fall into seven categories:

1.0 Leadership
2.0 Information and Analysis
3.0 Strategic Quality Planning
4.0 Human Resource Development and Management
5.0 Management of Process Quality
6.0 Quality and Operational Results
7.0 Customer Focus and Satisfaction (55:5)

The Baldrige core values and award criteria reflect many of the preconditions and customer satisfaction guidelines mentioned in the previous chapter. In particular, category seven of the award criteria, customer focus and satisfaction, is particularly suited to the research focus on the measurement of customer satisfaction. With 300 of a possible 1000 points reserved for customer focus and satisfaction, it is by far the most highly weighted category of the seven (55:13). In addition, the three distinct categories of the award recipients facilitates the selection of service oriented organizations.

Another important factor leading to the selection of the Baldrige award as a criterion for identifying quality service organizations was its degree of acceptance in the commercial sector. The extent to which the commercial organizations have embraced the Malcolm Baldrige National Quality Award as an indicator of a quality organization is extraordinary. Jeremy Main has called the Baldrige Award the "business equivalent of the Grand Slam, the Academy Award, and the Pulitzer" (56:62). This acceptance has made the Baldrige Award a driving force in the improvement of quality. Garvin goes as far as to state that the Baldrige Award is "the most important catalyst for transforming American business" (57:80). The multitude of articles praising the Baldrige Award, the scores of companies that apply every year for consideration, and the flood of awards imitating the Baldrige leave no doubt that the Baldrige Award is widely accepted (54:17). Figures

supporting this assessment are impressive. In 1992 alone, 90 companies applied for the Baldrige Award. Moreover, an estimated total of 175,000 companies have used the Baldrige criteria to assess the quality of their internal processes (58:2347).

A factor that contributes to the Baldrige Award's success is the stringent review process companies must go through to win the award. It is unlikely that an organization with less than stellar quality performance would win. The number of award recipients supports this assertion, especially with regard to service organizations. To date, only three service companies have been awarded the Baldrige Award: Federal Express Corporation-1990, AT&T Universal Card Services-1992, and The Ritz-Carlton Hotel Company-1992 (59:2, 4, 5). The effort these three companies took to win the Baldrige Award assuredly qualifies them as leaders in quality. Thus, Federal Express Corporation, AT&T Universal Card Services, and The Ritz-Carlton Hotel Company have been chosen to represent the commercial sector of the thesis population.

<u>Federal Quality Institute Presidential Award for Quality</u>. Just as the Baldrige Award recognizes world-class quality for civilian organizations, the Presidential Award for Quality recognizes the top quality management organizations in the government. It has evolved since its inception in 1988, and the award criteria are now "an adaptation of the Malcolm Baldrige National Quality Award, but reflect the unique federal environment and culture" (60:1). It has the same seven criteria elements as the Baldrige Award and similar weights are attached to each criterion, with 1000 total points associated with the criteria. The seventh element, customer focus and satisfaction, is heavily weighted, receiving one fourth of the total points. The award is "designed for organizations that have mature quality management efforts, well advanced in the quality transformation process" (60:1). The award is presented to no more than two organizations per year.

The Presidential Award for Quality criteria embody certain fundamental concepts of Total Quality Management:

- Quality is defined by the customer.
- A focus on continuous improvement is part of all operations and activities.
- Prevention of problems and waste is achieved through building quality into products, services, and processes.
- Success in meeting quality and performance goals depends on workforce quality and involvement.
- Senior management creates a customer orientation, clear and visible quality values, and high expectations. Reinforcement of values and expectations requires substantial personal commitment and involvement.
- Employees are valued and recognized for their involvement and accomplishments.
- Management decisions are made based upon reliable information, data, and analysis.
- Long-term commitments are made to customers, employees, suppliers, and the community.
- Public responsibilities are fulfilled.
- Partnerships are built with other agencies and the private sector to better accomplish overall goals. (60:8)

Because these concepts are an integral part of the preconditions to measuring customer satisfaction and the guidelines for customer satisfaction measures and methods, government service organizations winning the award seemed to be the most appropriate organizations to study. However, only three government organizations have received the Presidential Award for Quality, and the 1992 winner, Ogden Internal Revenue Service Center, was the only one with adequate documentation. The Air Force Logistics Command (AFLC) won the award in 1991, but is no longer in existence as a separate entity within the Air Force. No report on the AFLC was printed by the Federal Quality Institute, and the personnel responsible for submitting the award package were no longer readily available.

The low number of Presidential Award winners and the lack of documentation on these award winners forced the consideration of the Federal Quality Institute's Quality Improvement Prototype Award (QIP) as a sample selection criterion. The QIP is very

similar to the Presidential Award for Quality. While the Presidential Award is reserved for the *best of the best* in implementing quality management in the federal government, the QIP is awarded to organizations rated at just below the very top organization. Today, both awards are based on the same criteria discussed above. From 1988 through the 1994 award cycle, however, QIP contestants were judged against criteria similar to the Presidential Award for Quality criteria, but somewhat less detailed and rigorous. Over the years, the QIP criteria emerged in a similar fashion to that of the Presidential criteria, becoming more and more rigorous each year. Because the QIP Award recognizes leaders in quality management, this award provides a suitable basis for sample selection for the government service organizations.

With up to six QIP recipients per year, there were ample QIP Award winners from which to select the research sample. However, because the more recent recipients won the award based on more rigorous criteria, the sample selection focused upon 1992 and later QIP Award recipients. The sample was further narrowed by limiting the sample selection to only military QIP Award recipients of 1992 and later. This was done because an examination of the quality management, customer focus, and customer satisfaction efforts of military organizations would be more insightful and useful to the thesis sponsor, SMC/CUC, than that of non-military government organizations.

Based on this criterion, Aeronautical Systems Center, located at Wright-Patterson AFB, Ohio; Arnold Engineering Development Center, located at Arnold AFB, Tennessee; and Cherry Point Naval Aviation Depot, located at Cherry Point Naval Air Station, North Carolina were chosen as the three government service organizations to be examined. All three of these winners have improved processes, products, and services, increased customer satisfaction, and saved money through quality management. By winning the QIP Award, these organizations are recognized as some of the best in government, and serve as models for other military organizations to follow.

Instrument Development. To fully examine the customer satisfaction efforts and practices of the six quality award winning service organizations, a list of investigative questions based upon the research questions presented in chapter one and the findings of the literature review were developed. The list of investigative questions were used to construct the research questionnaire described in the Data Collection section that follows. This questionnaire was designed to provide detailed answers to the following research questions:

- What common practices do quality award winning organizations use in measuring customer satisfaction?

- What conditions exist that lead to differences in customer satisfaction practices?

- How well do these common practices in measuring customer satisfaction agree with the guidelines for measuring customer satisfaction?

The full questionnaire is presented in Appendix A.

The questionnaire was divided into three sections: preconditions, general methods, and individual methods. All of the questions were developed from the lists of preconditions and guidelines for customer satisfaction measures and methods that were established in chapter two. Each precondition or methods question is related to one of the preconditions or guidelines found in chapter two. Answering these questions was the focus of the data collection activities, which are described in the following section.

Data Collection

The questionnaire developed for the case study required that the award recipients provide a great deal of information. It was unlikely that any single data collection event would provide all the necessary information to adequately analyze the approaches of the six organizations. Therefore, the decision was made to collect the data in two stages. First, supporting documentation for the two awards were collected. The documentation

was subjected to a preliminary data analysis to determine areas where information was lacking and where clarification was necessary. This analysis essentially served as preparation for the second stage of the data collection. This second stage involved the administration of one or more telephone interviews and documentation exchanges with the award recipients to obtain the missing information.

Award Documentation Reviews. The Baldrige Award requires that award recipients document their quality practices and make these documents available to all who ask for the information. The FQI QIP Award also requires federal organizations to document their quality practices and provide this documentation to FQI. The FQI then serves as the distributor of this information. Therefore, all that was required for this stage of the data collection process was to request the information from the appropriate organization.

The National Institute of Standards and Technology (NIST), which administers the award, provided the relevant points of contact for the three commercial organizations. These organizations were contacted and they promptly provided the documentation. For two of the three organizations, the primary document was in the form of a Baldrige Award application summary. Federal Express, on the other hand, provided a case study document prepared by the American Management Association that discussed in detail the Federal Express approach for assuring service quality. In all three cases, the information contained in the primary documents provided a considerable amount of information. In addition to the primary documents, the service organizations also provided company brochures discussing the company philosophy, its quality implementation approaches, and outside assessments of the effectiveness of the organization's quality practices. These documents were of marginal benefit to the research except for the AT&T Universal Card Services case. AT&T Universal Card Services provided a case study prepared for Harvard University's Kennedy School of Government in addition to their application

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summary. This document provided a great deal of insight into AT&T Universal Card Services' approach to customer satisfaction. In all three cases, the amount of information provided in the first stage of data collection was substantial.

Although the FQI QIP documents were easier to collect than the Baldrige Award documents, they did not provide as much information. Because FQI served as the distribution agency for the award documents, it was the only organization that was contacted to complete the first phase of the data collection. (They had all the necessary documentation on hand and promptly provided the information.) The primary documents for the three military organizations were in the form of a short summary of the organizations approach to addressing the criteria for the FQI QIP award. These summaries were not detailed enough to provide the information required by the research. Consequently, much of the work necessary to complete the data collection process occurred in the second stage of the process.

Follow-up Questionnaire. As mentioned previously, the second stage of data collection required a preparatory data analysis effort. This preliminary data analysis effort concentrated on the identification of areas where information was lacking or vague. A cursory review of the award documents with regard to the questionnaire quickly identified the information gaps for each case. Questions that were adequately answered were appropriately noted and deleted from the list of questions that were provided to the service organization except in instances where the question served as a prelude to the question of interest. The resulting list of insufficiently answered questions were provided to the appropriate points of contact for each organization. Along with this list of questions was a request for an telephone interview opportunity with a representative designated by the organization. These initial telephone interview events quickly revealed that the answers to the questions provided to the organizations were not easily conveyed over the phone. Additional telephone conversations and more importantly, the exchange

of additional documents such as copies of survey instruments were required to fully answer the questions. This stage of data collection extended well into the data analysis effort, and its effectiveness at completing the data collection effort varied considerably among the organizations.

The Baldrige Award recipients held a universal advantage over the FQI QIP Award recipients at providing the necessary information. They were required to document their processes more fully than the FQI QIP recipients. As a result, the first stage of data collection was generally more effective at providing the necessary information. Consequently, the second stage of data collection for these organization primarily consisted of requests for clarification to questions and for copies of survey instruments. The effectiveness of this stage of data collection, however, was mixed. One problem that arose for AT&T Universal Card Services and The Ritz-Carlton Hotel Company was the proprietary nature of the survey instruments they developed. The company representatives of these two organizations were unable to provide copies of their survey instruments. Fortunately, enough information was provided in the award documentation to ascertain the types of information the organizations were attempting to collect with their instruments.

As previously mentioned, the FQI QIP documents were not as revealing. Consequently more effort was required with the subject military organizations to complete the second stage of the data collection effort. As expected, a single telephone interview event was insufficient to provide all the information required. The military organizations often requested more time to study the questions and provide written responses. There were a few factors leading to this request. One factor was that the FQI QIP Award did not require the award recipients to address customer satisfaction processes to the detail necessary to address the questions in the research questionnaire. Consequently, documentation to answer these questions were not readily available. Another factor that

complicated the data collection process was the turnover of personnel. This was especially true for ASC. Many of the people involved in the award documentation process were no longer part of the organization. This factor along with the scarcity of pre-existing documentation greatly lengthened the amount of time required by the military organization to answer the research questionnaire. The primary obstacle to answering the questions posed by the research questionnaire was that a substantial number of the issues addressed by the questionnaire have yet to be considered by the military organizations. Thus no amount of effort on anyone's part filled the information gap. Although this raises issues regarding the actual effectiveness of these organizations to measure customer satisfaction, the practices of these organizations can still be considered among the best practices in the military community to date to measure customer satisfaction. Therefore, the information provided by these organizations remained valuable to the research effort regardless of the extent the military organizations were able to address the questionnaire.

Data Analysis

The nature of the data analysis alleviated many of the problems faced in the data collection effort. Although it would have been preferable for every organization to completely answer all the investigative questions, it was not necessary. The descriptive nature of the thesis only required that sufficient information was collected to adequately describe the approach of an organization for measuring customer satisfaction. The list of investigative questions was developed to ensure that the data collection effort did not omit important factors associated with a customer satisfaction measurement program. Although the consideration of these factors was important to ensure a thorough data collection effort, it was unlikely that any organization's customer satisfaction program would encompass all these factors. Thus the purpose of the investigative questions differs for the data analysis effort in comparison to the data collection effort. For the data analysis effort, the investigative questions were primarily used to determine whether or not

leading quality organizations complied with the guidelines set forth in the literature review and to provide a basis for comparison between the organizations. Consequently, the fact that an organization did not address a particular issue with its approach provides just as much information as the fact that another organization considered the issue in detail in its approach. In either case, important information was addressed to describe the customer satisfaction measurement approach of the organization. This will be evident in chapter four where the findings are discussed.

The data analysis effort was conducted in three stages. The first stage has already been discussed. This stage merely involved the analysis of an organization's award documentation to determine which questions were fully addressed and which questions required more information. The results of this analysis were then used to develop the follow-up questions that were provided to the organization. The more detailed data analysis occurred in the latter stages.

The second stage involved the review of all the information provided by the organization to determine the key features of its customer satisfaction measurement approach. These key features were then used to develop the customer satisfaction measurement approach description for each organization. The investigative questions provided the basic elements for this description, but the description of the organization's approach was not limited to the content of these questions. For example, the organizations total quality philosophy provided important information in describing the organization's customer satisfaction measurement program. Because customer satisfaction is such an integral part of a total quality program, the overall total quality philosophy of the organization determined to a great extent, the customer satisfaction measurement approach a company used. In addition, there is not a one to one correlation between the findings of this stage and the investigative questions. Findings were limited to key factors that were critical to an organization's approach and did not address all the

factors that contributed to the customer satisfaction measurement program. As a result, some findings were the aggregate of multiple investigative questions. Once the customer satisfaction measurement approaches of the six cases were characterized, the third stage of data analysis began.

The final stage of data analysis relied upon the results of the second stage. The different approaches were compared to identify commonalities among and differences between the organizations. These commonalities and differences supported the individual findings for this stage of data analysis. Once these findings were identified, a more detailed cross-sectional comparison of the organizations was conducted for each finding. The information from this stage of the data analysis represented the primary contribution of the thesis effort. It not only provided key factors that contribute to a customer satisfaction measurement program, but also provided a situational context for a customer satisfaction measurement practitioner to judge the applicability of a particular factor to his or her approach. Given the importance of this stage of the data analysis effort, it was also the most involved of the three stages. This is reflected in chapter four.

Chapter Summary

The methodology utilized for this research effort was thoroughly discussed in this chapter. The research design selection, sample selection, research instrument development, data collection, and data analysis processes were covered and shown to be appropriate for the research effort. The results from the execution of this methodology are documented in the following chapter.

IV. Findings

Introduction

The findings of this research effort mirror the last two stages of the data analysis process. The first section provides brief descriptions for each of the organizations under consideration. The second section provides a synopsis of the notable similarities and differences that were found in the last phase of the data analysis effort.

Service Organization Descriptions

Although the emphasis of the thesis is on the similarities among and differences between the organizations, it is important to provide a description for each of the service organizations in the sample to set the stage for the cross sectional comparison. The following sections summarize each company's history, mission, quality program, and customer satisfaction practices.

AT&T Universal Card Services (UCS) (61:vii-ix,7-2,7-8 - 7-9). UCS is a 1992 Malcolm Baldrige National Quality Award recipient. Based in Jacksonville, Florida, with a collection center in Houston, Texas and a payment processing center in Columbus, Georgia, UCS employed 2072 employees at the time of the Baldrige Award (61:vii,ix). The selection of UCS as a Baldrige Award recipient is especially notable given that it came into existence only two years prior to the award. UCS was created in March 1990 as part of a strategic plan to boost AT&T's long distance calling customer base by linking the AT&T calling card to a consumer credit card. To accomplish this plan, UCS entered a credit card market already crowded with over 6000 issuers of MasterCard® and VISA® cards (61:vii).

Despite the abundance of competition, AT&T top management believed that UCS could flourish by competing in terms of quality. Before the creation of UCS, top

management at AT&T established a set of quality values to guide the way UCS conducted business and developed a comprehensive communication plan to flow these values down to every level of the organization. Since the beginning, the challenge at UCS has been to live these values. These values are:

- Customer delight,
- Continuous improvement,
- Teamwork,
- Commitment,
- Trust and integrity,
- Mutual respect,
- Sense of urgency (61:ix)

An integral part of UCS's quality program is its cus' ner relationship management program. Figure 4-A shows how the customer impacts the UCS's processes.
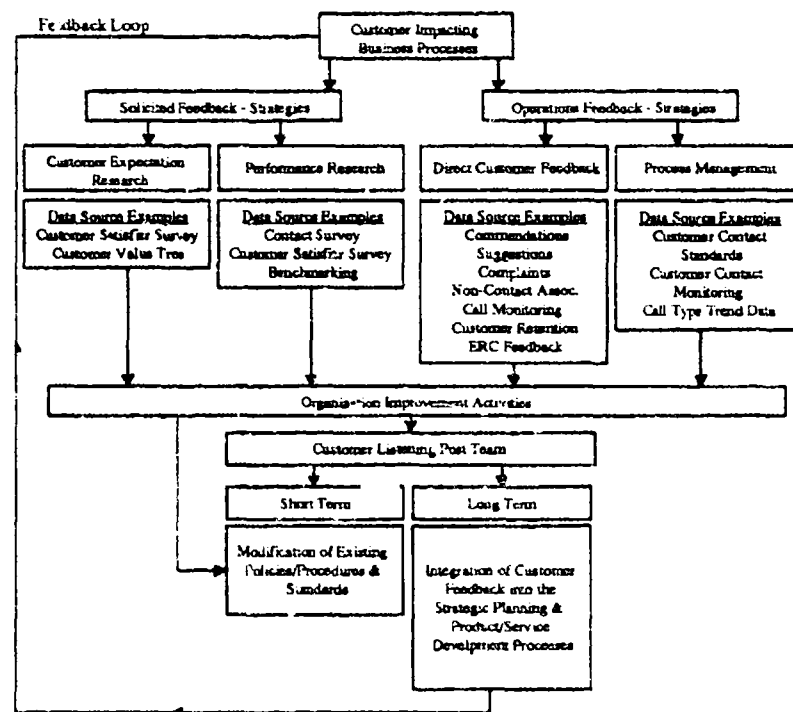
Figure 4-A. UCS Customer Relationship Management Strategies (61:7-2)

Figure 4-A shows that UCS utilizes a number of means to solicit customer feedback to determine customer satisfaction and improve its processes. One primary method utilizes telephone interviews. These interviews occur monthly and involve 200 UCS customers and 400 competitors' customers. The data from this research are reported monthly on a 3-month rolling average. To ensure the validity of this data, UCS has teamed with an independent market research supplier who does not disclose that AT&T is the sponsor of the research (61:7-8,7-9). In addition to telephone interviews, UCS uses performance measures tracking, complaint handling, and call monitoring to measure customer satisfaction and identify emerging customer needs and expectations (61:7-2).

The result of the UCS quality program is significant. Within two years of its creation, UCS had become the third ranked credit card issuer in total number of accounts and second in amount of dollars spent by customers in the United States. In short order, UCS had become a major AT&T asset with a business worth over $3.5 billion in receivables for AT&T. More importantly, UCS's internal research effort showed that it satisfied its founding objective - to increase long distance calling volume and account retention for AT&T (61:vii).

Federal Express (62:9-14; 63). Another example of successful quality implementation is the case of the Federal Express Corporation. Federal Express was the first service organization to win the Malcolm Baldrige National Quality Award in 1990. When compared to UCS, Federal Express's beginnings were humble. Federal Express began operations on April 17, 1973 with an eight-plane fleet promising to do something no other delivery service promised - provide door-to-door delivery of small packages and documents overnight. Despite the attractiveness of Federal Express's offer, profits were difficult to come by in the early years. Stories of employees pawning their own jewelry to fuel a delivery van and pilots charging jet fuel on their personal credit cards attest to this

assessment. Federal Express had to build a reputation of reliability in order to be successful.

Federal Express CEO, Frederick W. Smith, recognized this fact and implemented a quality philosophy termed "People-Service-Profit" (PSP) to build this trust (62:12). The PSP philosophy held no secrets to success. It simply was the result of sound managerial theories and practices documented in management literature and long advocated by quality *gurus*. The PSP philosophy relies on the following principles:

- A consistent, clearly stated service quality goal - 100 percent customer satisfaction - enunciated frequently and pursued doggedly in innumerable ways, large and small.
- A mathematical measure of absolute service failures as a catalyst to promote continuous quality improvement.
- Employees who feel empowered through open communication, training opportunities, quality improvement tools, and excellent leadership. They thus gain the freedom to take risks and innovate in the pursuit of quality and service for both internal and external customers.
- Finally, and most fundamental, a people-first environment that acknowledges employee satisfaction as the primary corporate objective, and nurtures a culture from which customer satisfaction and profits spring. (62:12)

Federal Express's commitment to these principles was instrumental to their receipt of the Baldrige Award and their high customer satisfaction rating (94% of all Federal Express customers reported that they were completely satisfied).

This customer satisfaction rating was the culmination of a number of efforts at Federal Express to ensure customer satisfaction. Even before its creation, Federal Express conducted market research to determine whether or not customers needed an overnight delivery service. The research confirmed the need and led to the creation of Federal Express. This set a precedence for the organization. Federal Express continues to utilize market research extensively to measure customer satisfaction, determine customer needs, and identify improvement opportunities. Currently, Federal Express has six ongoing studies: the Customer Satisfaction Study, the Targeted Customer Satisfaction Studies, the

Comment Card System, the Customer Automation Study, the Canadian Customer Satisfaction Study, and the European Satisfaction Study (63). Federal Express seeks to probe for improvement opportunities with these studies. Consequently, the preferred communication medium for most of these studies is the telephone. Although surveys provide Federal Express with substantial information, the customer satisfaction tool that impacts Federal Express's operations the most is its Service Quality Indicator (SQI) system. The SQI system provides Federal Express with continuous and immediate feedback on the quality of its services. It utilizes a 12-item set of performance based measures to ascertain the level of customer satisfaction and service quality. These indicators are: abandoned calls, complaints reopened, damaged packages, international, invoice adjustments requested, lost packages, missed pick-ups, missing proofs of delivery, overgoods, right day late deliveries, traces, and wrong day late deliveries (62:56-57). With the SQI, Federal Express measures satisfaction on a transaction by transaction basis. This is especially noteworthy considering that Federal Express moves nearly 300 million packages in a year. Federal Express's customer satisfaction program demonstrates its commitment to customer satisfaction.

This commitment has given Federal Express an enviable position in the express delivery market. Within ten years of its creation, Federal Express topped $1 billion in revenues, making it the only company at that time to accomplish this feat. Within 20 years of its creation, Federal Express had become the "unquestioned leader in overnight air express, generating more than $7 billion in 1990 revenues, a commanding 43 percent share of the air express market" (62:10). By 1990, Federal Express had grown from eight aircraft to owning the largest air cargo fleet in the United States with over 420 aircraft. In addition, it had expanded its ranks to more than 94,000 employees worldwide.

The Ritz-Carlton Hotel Company (64:2,11). The final case to be discussed is The Ritz-Carlton Hotel Company. In 1983, W.B. Johnson Properties acquired the exclusive North American rights to the Ritz-Carlton name, the "foremost name in luxury hotels for over 60 years", in order to develop an "American hotel group catering to the needs of the prestigious travel consumer and the corporate travel and meeting planner worldwide" (64:2). To succeed, Ritz-Carlton needed to determine what factor(s) would provide them the competitive edge in the industry. Through market research, Ritz-Carlton identified a quality factor that was generally lacking in the luxury hotel business, "highly personalized, genuinely caring service delivery" (64:2). This factor was to be the key to Ritz-Carlton's success and the driving objective for their quality program.

To ensure personalized and caring service delivery, Ritz-Carlton developed its own unique service quality approach. This approach required Ritz-Carlton employees to track and meet the needs and expectations of each customer, prevent difficulties from ever reaching these customers, and react instantly to pacify dissatisfied customers and correct their problems immediately (64:2). In order to do this, Ritz-Carlton incorporated all these functions into the service process of every employee through its "Three Steps of Service" concept shown in figure 4-B.

As figure 4-B shows, the primary tool in Ritz-Carlton's customer satisfaction program is the complaint/request handling system. Through this system, Ritz-Carlton has the opportunity to collect and act on customer satisfaction data every time an employee comes in contact with a customer. This is especially noteworthy given that Ritz-Carlton has as many as "one million employee-guest interfaces each day" (64:2). The data from these interfaces are recorded and tracked on a customer by customer basis and used to provide guidance to Ritz-Carlton employees for future interactions with that customer. The volume of data provided by this system has been unprecedented. At the time of the Baldrige Award, Ritz-Carlton had on file the individual expectations of more than 240,000
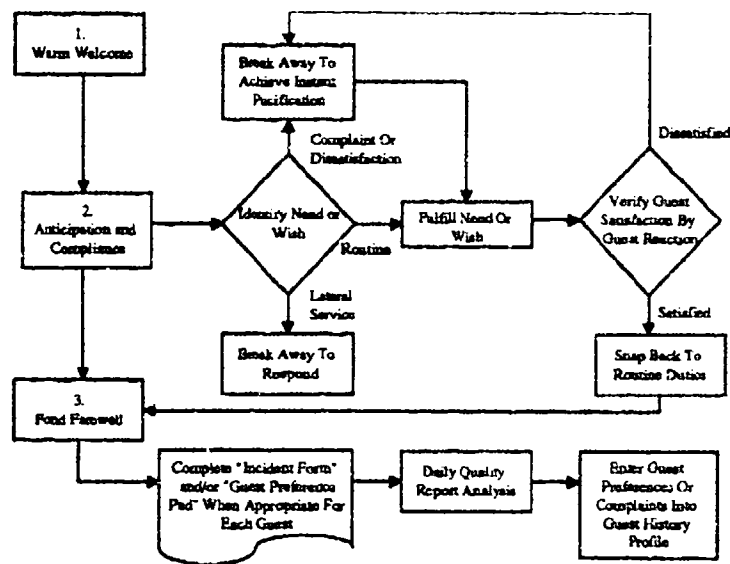
Figure 4-B. The Ritz-Carlton Hotel Company Three Steps
of Service (64:11)

customers. This system is a unique example of an organization's commitment to customer
satisfaction.

Although Ritz-Carlton's complaint/request handling system represents the primary
method for ascertaining customer satisfaction and recording customer requirements, it is
not the only tool utilized. Ritz-Carlton also utilizes customer surveys and repeat business
and market share tracking to determine customer satisfaction levels and to identify
opportunities for improvement. The variety of tools Ritz-Carlton used for its customer
satisfaction program were instrumental to its success.

Ritz-Carlton had become the unquestionable leader in the luxury hotel industry. A
Gallup Survey conducted at the time of the Baldrige Award identified Ritz-Carlton as the
first choice of customers with a 94% customer satisfaction rating which greatly surpassed
its closest competitor (57% customer satisfaction). The Malcolm Baldrige National
Quality Award was a well deserved form of recognition for Ritz-Carlton's efforts.

4-7

Arnold Engineering Development Center (65:1 - 4-5; 66:3-4; 67:3). Success with quality, however, is not a purely commercial concept. Government agencies have recognized the merits of a quality program aimed at satisfying the customer. To further this understanding, the Federal Quality Institute has recognized several agencies worth noting. One notable agency is Arnold Engineering Development Center.

Arnold Engineering Development Center, located at Arnold Air Force Base, Tennessee, is one of three military service organizations which received the QIP Award in 1993. AEDC, which is part of the Air Force Materiel Command, is a national aerospace ground test and evaluation facility. As the free world's largest and most advanced aerospace ground test facility, it "has played a key role in the development of virtually every military aircraft and weapon system since 1951" (65:1-1). AEDC has a yearly budget in excess of $300 million, and employs more than 3,300 personnel, of which more than 2,800 are service and support contractor personnel. This diverse group of military, Department of Defense (DoD) civilians, and contractors from three separate corporations is fully integrated as *Team AEDC* to accomplish the Center's mission.

The mission of AEDC is to "conduct tests, engineering analyses, and technical evaluations for research, development, and operational programs of the Air Force, DoD, other government agencies, and industry" (65:v). The service AEDC performs is testing, and like many other test organizations, its main product is data. Its major external customers include the DoD weapon system acquisition and testing community, National Air & Space Administration, U.S. and international aerospace industry, and academia.

AEDC's customer base was not always so diverse. Before it began implementing the TQM philosophy in 1989, the customer base included only branches of the federal government. At that time, AEDC's budget and its customers' budgets started to decrease and testing of military systems declined. With this decline in business, AEDC was faced with the possibility of "facility shutdowns and the subsequent loss of the vast experience

base which makes AEDC a world-class activity" (65:2-2). Recognizing this dilemma, Colonel Stephen P. Condon, the AEDC commander at the time, initiated AEDC's continuous quality improvement process. Today, AEDC is well on its way toward implementing TQM, has expanded its customer base, and is evolving "into an even more sought-after ground test facility" (65:2-2).

AEDC has embraced the *Quality Air Force* quality philosophy and the Air Force vision which is: Air Force people building the world's most respected Air and Space Force - Global Power and Reach for America. The *Quality Air Force* philosophy embodies the TQM core values and concepts discussed in chapter three (68). AEDC describes the philosophy as "a leadership commitment and operating style that inspires trust, teamwork and continuous improvement, everywhere in the Air Force" (65:2-1). Consistent with this quality philosophy, AEDC has adopted the goals of its parent organization, the Air Force Materiel Command:

- Satisfy our customer's needs...in war and peace.
- Enable our people to excel.
- Sustain technological superiority.
- Enhance the excellence of our business practices.
- Operate quality installations. (65:2-2)

To meet these goals and the objectives of its customers, AEDC has five primary objectives which are directly linked to the level of customer satisfaction:

- Achieve 100% of test objectives 95% of the time.
- Meet test start dates 90% of the time.
- Complete 95% of all test projects at or below estimated cost.
- Reduce the average customer test cost by 10% over the next two years.
- Meet customer expectations as evidenced by an average rating of 5.0 out of a possible 6.0 on a customer survey. (65:4-1)

These objectives have built-in performance measures or metrics which are direct indicators of mission performance. In striving to meet or exceed these objectives, AEDC focuses on

meeting the customer's testing requirements and collecting the right data, which is the reason customers come to AEDC in the first place.

The first four customer-oriented performance measures, or metrics, built-in to the objectives listed above serve as one of two methods of measuring customer satisfaction employed by AEDC that directly support its goals and objectives. Together, the four metrics constitute an indirect method of measuring customer satisfaction as discussed in chapter two. Developed through consultation with AEDC customers, these metrics are directly related to the fifth metric of Meet Customer Expectations. By recording and tracking the status of the metrics, AEDC obtains independent and complimentary indications of mission performance that directly relate to customer satisfaction. This guards against potential bias in the surveys and also identifies potential problem areas to be addressed or opportunities to be exploited. Furthermore, the metrics also drive appropriate customer focused, action-oriented behavior. AEDC employees concentrate on value-adding activities through the metrics, and take action to identify and correct problems indicated by negative trends in the metrics data.

The second and primary method of measuring customer satisfaction employed by AEDC is customer satisfaction surveys. AEDC asks every customer who has work accomplished at AEDC to provide feedback by completing an external customer survey. In the survey, customers rate AEDC on a six point satisfaction scale in five broad areas: planning, financial management, program management, schedule, and working relationships. Internal customer satisfaction is addressed as well through a separate internal customer survey. The feedback obtained from these surveys compliments the feedback obtained through the metrics. The feedback of the surveys is, in general, more actionable than that of the metrics. Both of these surveys are discussed in detail in the evaluation of similarities and differences between the approaches and practices of the six organizations that follows. Copies of these surveys are included in Appendix B.

The most notable customer satisfaction practice of AEDC is the use of customer satisfaction in driving appropriate behavior towards continuous improvement. This is done through management by metrics. Satisfying customer needs is the primary goal of AEDC (66:3). To guide the employees toward meeting this goal, AEDC established the customer metric of Meet Customer Expectations. Supporting this metric are the first four metrics listed above which are called product metrics. The four product metrics are tracked on a quarterly basis. Process analysis is conducted on a weekly basis throughout the center to support the four product metrics. Processes are analyzed continuously to improve performance against the four product metrics which, in turn, support the customer metric. In this way, all center activities are focused on the primary goal of satisfying customers by meeting their needs. This process is illustrated in Figure 4-C.

Overall, the AEDC Quality Improvement Office personnel feel that they have been

AEDC Management By Metrics
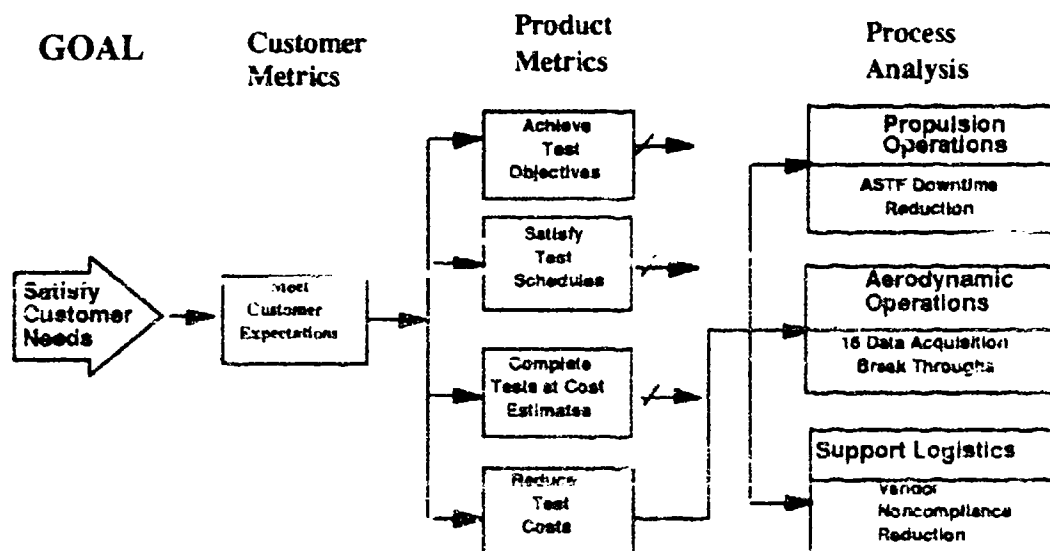
Figure 4-C. AEDC Management By Metrics (66:4)

successful at measuring customer satisfaction. By linking the two methods of measuring customer satisfaction through management by metrics, continuous improvement has blossomed and performance as measured by the product and customer metrics has shown an increasing trend over the past five years. Customer confidence in AEDC continues to increase and other government and commercial aerospace industries are taking notice of AEDC's quality and commitment to customers. AEDC's reputation has been enhanced, and its business base is actually increasing instead of decreasing. Several commercial aerospace companies have recently formed alliances with AEDC to conduct over $300 million of commercial test work at AEDC over the next 20 years.

Cherry Point Naval Aviation Depot (27:i- 4-8; 69). Cherry Point NADEP, located at Cherry Point Naval Air Station, North Carolina, is the only two-time QIP winner. It was the recipient of the first QIP Award ever awarded in 1988, and was one of three military organizations to receive the award in 1993. It employs over 3,300 civilians and military personnel, and is part of the Naval Air Systems Command (NAVAIR) *Corporation* of depots. Its mission is "to provide the nation with the highest quality, worldwide aviation depot level maintenance, engineering, and other logistics support on time and at the least cost" (27:ii). NADEP's customers include the Navy, Air Force, Army, Marine Corps, Coast Guard, NASA, and the military forces of allied nations. NADEP has strong customer focus and sees process improvement as the best way to satisfy customers. With more than $360 million in business annually, it is dedicated to providing customers with the best possible quality at a competitive price.

The best quality at a competitive price was not always a top priority at NADEP. Early in the 1980s, the six Navy aviation depots were actually losing money. The Navy initiated efforts to improve productivity, but achieved little because they had not linked productivity with quality. In 1986, NADEP and the other depots were faced with

decreasing budgets, increased competition, and higher demands for more sophisticated support . To meet these challenges, NAVAIR, the parent organization of NADEP, "launched an aggressive program to assure continuous improvement within the command" (27:2-1). NAVAIR and the depots formed a *Corporation* and developed a strategic business plan which "requires constant improvement in operational effectiveness and efficiency, enhancement of competitive position, timely response to customers' changing requirements, and dedication to the development of employees" (27:2-1). In conjunction with the business plan, NADEP and the other depots began implementing the TQM philosophy. The implementation of TQM continues today at NADEP in its drive for world-class quality. Even though TQM coverage has spread to only 50 percent of the depot's processes, it has still produced several accomplishments.

The quality philosophy of NADEP is simply the implementation of the core values of TQM. The drive for continuous improvement and customer satisfaction permeates all aspects of the organization and its operations. The quality philosophy is reflected in NADEP's mission statement, its strategic business plan, and in its vision statement. NADEP's vision statement is:

WE WILL:

- Successfully compete with private industry and DoD activities.
- Be an organization that inspires customer confidence and advocacy.
- Provide a work environment that is safe and secure and promote equal treatment for all employees.
- Be at the forefront of the implementation of total quality leadership.
- Achieve teamwork throughout the depot to meet all the challenges of the future.
- Be recognized as a good neighbor and as a desired asset to the surrounding communities.
- Be leaders in the corporation. (27:2-1)

NADEP employs both direct and indirect methods of measuring customer satisfaction. Direct methods include monthly informal telephone surveys/interaction,

annual face-to-face meetings, and an independent written survey. The direct methods are administered by NADEP's Customer Liaison Office. This office is "dedicated to promoting open communication with external customers" (27:3-3). To ensure that customer complaints and concerns are relayed to the right people, it provides each customer with the names and phone numbers of key NADEP personnel (27:3-3). It also maintains a database of customer points of contact. Feedback from the direct methods is used immediately to take action to satisfy the customer as evidenced by answering all customer concerns within two working days.

NADEP also employs indirect methods of measuring customer satisfaction by tracking quality indicators such as a composite quality index, schedule conformance indices, and cost performance. Although they do not provide direct actionable data on what to do to improve customer satisfaction, they are a complement of the other direct measurements.

The one thing that sets NADEP apart from the other organizations studied in this research is its Customer Liaison Office (CLO). The CLO has enabled NADEP to go beyond customer satisfaction to the point of customer advocacy. By serving as a single-face-to-the-customer, the CLO has streamlined customer satisfaction measurement methods, data analysis, and procedures for taking action to improve customer satisfaction and business operations. Centralizing all customer contact to one office within NADEP has enabled NADEP to concentrate its customer focus efforts and streamline procedures to the point where customer concerns and complaints are addressed within two working days. Through CLO management of customer feedback, actions to satisfy customers and areas for continuous improvement are identified and addressed in a timely manner. Through the CLO, NADEP has actually increased its market share in a highly competitive aircraft maintenance market, from $249 million in 1988 to more than $400 million today (70:11).

Aeronautical Systems Center (71:i-17; 72:1-3). Aeronautical Systems Center, with its headquarters located at Wright-Patterson Air Force Base, Ohio, is one of the product centers of the Air Force Materiel Command (AFMC). It received the QIP Award in 1992, just six years after TQM principles were introduced to this large organization. ASC employs more than 13,000 military and civilian personnel at facilities across the nation to accomplish its mission of conceiving, designing, developing, testing, and acquiring aviation and weapon systems for the Air Force. Some of the well known weapons systems developed and managed by ASC are the F-22, F-15, F-16, A-10, F117A, FB-111, B-1, B-2, B-52, C-17, C-130, and C-141. ASC's annual budget is measured in the billions and represents a major portion of the total Air Force appropriations. ASC's customers include the major commands of the Air Force such as Air Combat Command, Air Mobility Command, and Air Education and Training Command as well as other government and DoD organizations, international allies, and the American taxpayer.

The ASC began its quality journey in the mid-1980s as part of "the Air Force's emphasis on improving productivity and the reliability of its systems" (71:4). Personnel and budget cuts also provided impetus to change to a quality culture. Additional factors that necessitated the need to change were:

- A shrinking defense industrial base
- Increasing international competition in defense products
- Flat defense budgets
- The increasing cost of "un-quality"
- The erosion of public confidence in the defense acquisition process. (71:4)

Today, ASC embraces the Quality Air Force (QAF) quality philosophy, but ASC did not have this philosophy to use as guidance in its initial implementation of TQM principles. When ASC received the QIP Award in 1992, it was well on its way toward building a quality culture as illustrated in Figure 4-D:

QUALITY CULTURE

FIGURE 4-D: ASC Quality Culture (aqq:5)

The ASC also developed a set of TQ Principles to guide it in the implementation of Total

Quality:

1. Change the culture - - A WAY OF LIFE
2. Commit fully to AFMC's policies and goals
3. Know and satisfy our customer's needs
4. Delegate responsibility and authority - accept accountability - make it better
5. Give EVERYONE a stake in the outcome
6. Set goals, compete, measure progress, and reward
7. Create a climate of pride, professionalism, excellence and trust
8. Strive for continuous improvement (71:5)

The role of customer satisfaction in ASC's quality philosophy, then and now, is to serve as

the guiding principle. ASC's top priority is to satisfy its customers by "providing them

with quality systems for the defense of our nation" (71:1).

To assess how well ASC satisfies its customers, it employs both direct and indirect

methods of measuring customer satisfaction. Direct methods include written surveys and

questionnaires, phone surveys/interaction and periodic face-to-face meetings. Indirect

methods include tracking metrics directly related to customer satisfaction such as cost and

schedule conformance. Actual measures and methods vary widely throughout ASC

because TQM implementation is at various stages throughout ASC and ASC has such a diverse mix of technical, administrative, and program management units.

ASC's size and diversity set it apart from the other five organizations. Although some of the other organizations have several thousand employees and do hundreds of millions of dollars worth of business each year, none of them match ASC in terms of diversity of services, types of organizational units, and customers. AEDC ground tests aerospace systems. NADEP repairs and maintains aircraft. Federal Express delivers packages on time throughout the world. Ritz-Carlton provides an unforgettable hotel experience. AT&T Universal Card Services provides credit card services. All of these organizations provide a single purpose oriented service. ASC in contrast, conceives, designs, develops, tests, and acquires quality aeronautical systems and related support equipment for the U.S. Air Force and other allied nations. In doing so, ASC manages all phases of research and development of aeronautical systems and related technologies, from concept exploration through production.

Although the other five organizations have large, complex organizational structures with functional, administrative, and managerial units, none of them compares to the diversity and complexity of ASC. ASC's program management organizations or System Program Offices (SPOs) which manage all aspects of the research, development, and production of single weapon systems, are themselves mini-corporations. "SPOs manage all facets of the acquisition process including planning, organizing, budgeting, scheduling, and directing. They also oversee development, testing and evaluation as well as initial operations testing. In addition, they provide functional support in the areas of program control, engineering, contracting, logistics, manufacturing, quality assurance, and systems safety" (71:3). Technology efforts within ASC are managed through seven technology directorates - materials, aero propulsion and power, solid state electronics, avionics, armament, flight dynamics, and manufacturing technology - by Wright

Laboratories. The SPOs and Wright Laboratories, combined with the staff and support organizations, make up an organization that is rivaled in diversity and complexity only by other Fortune 500 companies. This diversity is a contributing factor to the variety of customer satisfaction measurement measures and methods and varying stages of implementation of TQM principles in ASC.

Notable Similarities and Differences

With organization introductions concluded, attention can now be focused on the primary focus of the thesis effort, the cross-sectional comparisons. These comparisons attempted to determine notable similarities and differences between the organizations at three different levels. The first level of comparison focused on the organizations' Total Quality philosophies and their commitment to customer satisfaction. The second level of comparison focused on the organizations' customer satisfaction measurement programs in general. Finally, the third level of comparison focused on the particular types of customer satisfaction measurement methods utilized by the organizations. The two types discussed are direct and indirect customer satisfaction measurement methods.

Although commercial and military examples were provided to demonstrate each finding, the discussion that follows is only in summary format. Additional information is provided in Appendix C, *Case Study Questionnaire Responses.*

Organization Level Findings. As discussed previously, the first level of comparison focused on the general quality philosophies of each organization and their commitment to the customer. There were seven findings at this level of comparison. They are as follows:

Customer Focus Program. All organizations have developed a formalized program for determining customer needs and expectations. These programs are not limited to just one method, but are made up of a combination of methods. In general,

commercial organizations use a wider mix of methods than military organizations. In all cases, however, customer satisfaction measurement methods are part of the combination of methods used to determine customer emerging requirements. Consequently, customer satisfaction measurement methods are dual purposed: measure customer satisfaction and determine customer requirements (61:7-1 - 7-2; 64:13; 62:53; 71:8; 72; 27:ii,3-3; 65:1-2,3-5).

A commercial organization that exemplifies this finding is AT&T UCS. UCS has developed a set of methods to solicit and gather customer expectations and requirements which it calls "customer listening posts" (61:7-1). At the time of the Baldrige Award, UCS had four key customer listening posts: customer expectation and needs research, performance research, direct customer feedback, and process management (61:7-1 - 7-2). The methods these listening posts used to collect data were varied. In the case of direct customer feedback, the data not only identified requirements, but also solicited customer feedback on their level of satisfaction with the service they were provided.

Military organizations that exemplify this finding are AEDC and ASC. Both employ Customer Days as a means of soliciting customer requirements and expectations. Customer Days are meetings in which a particular customer is invited to come to the organization to learn what the organization's capabilities are and to establish teaming relationships. The customer's needs, requirements, and expectations are solicited by the organization in forming the foundation of new programs. By involving the customer from the start, the organization carries out the program with customer focus and customer satisfaction as top program priorities (71:8; 65:3-5).

Top Management Commitment. The top management of all the organizations recognize the importance of the customer satisfaction program to their mission and are thus committed to the program. This commitment is not passive. Top management for all the organizations take positive, tangible steps to convey their

commitment to customer to the organization (61:1-1; 64:4; 62:14,35; 72:1; 71:11,17; 27:2-1,2-2; 65; 66).

A commercial organization that exemplifies this finding is UCS. UCS has the statement, "Customers are the center of our universe," engraved in their lobby (61:1-1). UCS top management has instituted several procedures to show its commitment to this statement and to quality processes in general. They are:

- Meeting with customers,
- Listening to customers' calls,
- Reviewing daily process measures,
- Meeting with suppliers quarterly,
- Benchmarking visits,
- Reviewing/using customer feedback,
- Reviewing program management process monthly,
- Co-chairing monthly Customer Listening Post meetings,
- Hosting team sharing rallies,
- Leading employee focus groups,
- Holding all-employee meetings quarterly,
- Owning Baldrige self-assessment categories (61:1-1)

As the list shows, UCS top management has taken a proactive role in ensuring quality and customer satisfaction.

A military organization that exemplifies this finding is AEDC. AEDC top management strongly encourages every project manager at AEDC to obtain feedback from the customers. If the program manager doesn't obtain feedback, top management wants to know why. Additionally, every test customer critique (external customer survey) is reviewed thoroughly by several levels of management to look for areas "where immediate action can be taken to make a less-than-satisfied customer satisfied" (66:1). Furthermore, the AEDC commander personally leads a quarterly review of the customer critiques with the rest of the Center staff directorates and contractor general managers. The commander also leads a quarterly review of the AEDC customer objective report with the six customer objective owners (these objectives have built-in measures which

constitute an indirect method of measuring customer satisfaction which is discussed in chapter four). Customer satisfaction is taken very seriously by AEDC top management, and this commitment has led to corporate wide buy-in for the customer satisfaction program at AEDC (65; 66:1).

Corporate Buy-In. Corporate buy-in is the general acceptance of a principle among the organization's employees. A majority of the organizations claim to have corporate buy-in for the customer satisfaction program. To support their claims, organizations point to procedures that encourage commitment to customer satisfaction (61:ix; 64:4; 62:31; 72; 27:2-3; 66:1).

A commercial organization that exemplifies this finding is UCS. UCS not only stated its expectation that every employee, especially customer contact employees, be committed to quality and customer satisfaction, but they also linked monetary bonuses to performance measures associated with customer satisfaction. This "bucket of measures" was tracked every day. "If the company as a whole achieved the quality standards on 95% of the indicators on a particular day, all the associates or non-managerial employees-'earned quality' for the day, and each 'quality day' meant a cash bonus, paid out on a quarterly basis" (73:4). These bonuses were a major motivator for UCS employees.

AEDC exemplifies this finding for military organizations. Corporate-wide buy-in was established through the highly visible top management commitment and AEDC's customer objectives. The objectives are institutionalized and have a *critical few* related measures or metrics which drive appropriate customer-oriented behavior. These objectives were developed through strategic planning and alignment of the objectives with the goals of the nation, the Air Force. and the parent organization, AFMC. These objectives were communicated to everyone in the Center through the AEDC strategic plan. In concentrating on meeting a small number of customer focused objectives. all employee actions are focused on providing value to the customer and increasing

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satisfaction. The objectives are taken very seriously by everyone in the organization, from the customer contact employees to the board room (66:1).

Dissemination of Customer Satisfaction Information. The reporting of customer satisfaction data varies from method to method. Without exception, however. the top management of the organizations receive reports on the data periodically. Because of the semi-autonomous nature of the various organizations making up ASC, top management refers to the head(s) of the particular organization measuring customer satisfaction rather than the ASC top management. In all of the organizations, the customer satisfaction reports are used by top management primarily for strategic planning purposes (61:7-1; 64:14; 62:55; 71:1; 27:3-3; 66:1; 67:1). In addition to top management, all organizations have at least one method that provides direct feedback to individual employees dealing directly with the customer. This direct feedback is typically generated by tracking performance measures linked to customer satisfaction or by tracking customer complaints. The data provided to the individual customer contact employees are primarily used to guide immediate actions to satisfy customer satisfaction (61:7-3; 64:14; 62:55; 71:1; 27:3-3; 66:1; 67:1; 69).

A commercial organization that exemplifies this finding is UCS. All customer satisfaction data is collected and tracked by the "Customer Listening Post Team" which is charged with long and short term improvement planning (61:7-1). Employee feedback is also provided through the daily tracking of performance measures linked to customer satisfaction. Daily performance results are available to every customer contact employee through the use of video monitors throughout UCS (61:5-2). Consequently, customer satisfaction data is always available to all employees in the company in one form or another to guide their actions.

A military organization that exemplifies this finding is NADEP. NADEP uses the direct feedback from telephone surveys/interaction immediately to improve customer

satisfaction. Customer concerns expressed to the Customer Liaison Office are immediately passed on to the shop floor to the employees actually performing the maintenance work on the customers' aircraft. The shop floor personnel assess the concern, formulate a response, and take action. The Customer Liaison Office, in turn, contacts the customer within two working days to follow up on what NADEP is doing to address the customer's concern (27:3-3; 69).

Customer Satisfaction Data and Continuous Improvement. The majority of the organizations have a formalized procedure for using customer satisfaction data to drive continuous improvement. In most cases, the procedure calls for the use of customer satisfaction data to be used for strategic planning by top management or high level planning teams (61:3-1,7-2; 64:13; 62:63; 66:1).

A commercial organization that has provided a notable example of how customer satisfaction data is used to drive continuous improvement is The Ritz-Carlton Hotel Company. Figure 4-E shows the process used by Ritz-Carlton to accomplish this objective. As one can see from the figure, Ritz-Carlton has developed a formalized process whereby several sources of customer satisfaction are used in a systematic fashion to improve the service provided to the customer.

AEDC exemplifies this finding for military organizations. AEDC uses customer satisfaction in the short-term to satisfy the customer and in the long-term to foster continuous improvement. AEDC employs a formal system for both (66:1). Quarterly and annual reports of customer satisfaction results are reviewed by the senior management to identify areas for improvement on a Center-wide basis (66:1). Through this process, improvements which enhance AEDC's products and services overall are identified and implemented (66:1)

Empowerment of Customer Contact Employees. The majority of the organizations empower employees to satisfy the customer. The level of empowerment in some of these organizations is substantial (61:7-6; 64:9; 62:29-30; 27:3-3; 65:3-4).

A commercial organization that exemplifies this finding is the Federal Express Corporation. Federal Express invites its employees to work autonomously and be self-managing and encourages risk taking. This is particularly evident in Federal Express's Billing Center where non-management employees are authorized to resolve customer billing problems up to a $2,000 credit or refund without management approval. The latitude given to Federal Express employees was meant to foster empowerment and tap
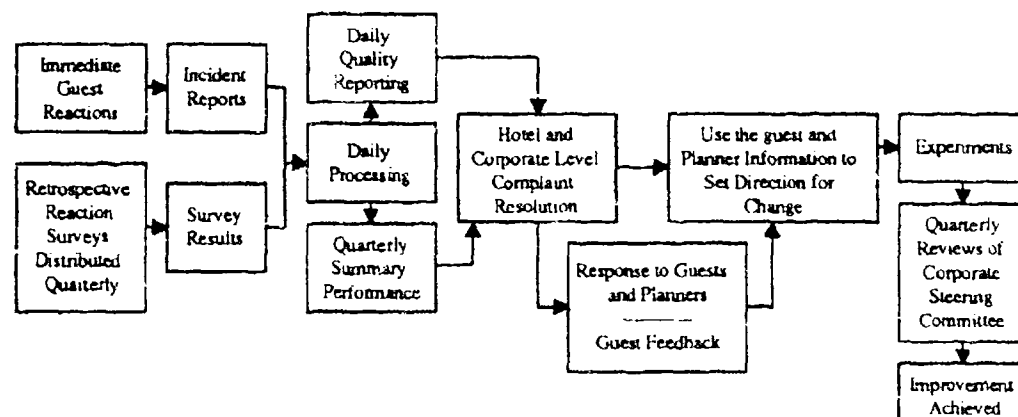
Figure 4-E. The Ritz-Carlton Guest and Planner
Satisfaction Measurement System (64:13)

the "discretionary effort" inside every employee to create extraordinary performance (62:29-30). As a result, Federal Express has witnessed extraordinary performance. One notable example was the decision of an employee to continue collecting packages despite his trembling surroundings during the 1989 San Francisco earthquake (62:29). Federal Express has encouraged empowerment and put it in tangible terms for its employees.

A military organization that exemplifies this finding is NADEP. At NADEP, program officers and customer service personnel have the authority to handle resolution of customer problems, "ranging from reinduction of aircraft to initiating corrective action, process improvements and specification changes" (27:3-3). This authority covers spending up to several thousand dollars in some instances.

Training of Customer Contact Employees. The majority of the organizations have a formalized training program for customer contact employees. The training programs stress interaction skills and how to take action to please the customer. This training is prominent in the commercial organizations. Training in the military organizations tends to focus more on general TQM principles and general customer-vendor relationships (61:7-5; 64:8; 62:20: 71; 27:3-3; 65).

A commercial organization that exemplifies this finding is The Ritz-Carlton Hotel Company. Ritz-Carlton ensures that all employees, especially customer contact employees, possess the skills to be a good service provider even before they are hired through a process they call "character trait recruiting" (64:8). Once hired, employees undergo a series of training activities. The training begins with a two day orientation conducted by the training manager and the senior hotel executives. These high level executives personally demonstrate the Ritz-Carlton Gold Standards for service performance and demonstrate methods to accomplish these standards. The focus of this orientation is to demonstrate top management's commitment to the Ritz-Carlton standards and instill these values in all new employees. Once employees have undergone this

orientation, they proceed through a comprehensive training effort to master the procedures of their respective position. After this training, the employees must pass written and skill demonstration tests to be certified to perform their duties. Training does not end here. Every day, employees attend a briefing session in their work area to receive instructions on becoming a certified quality engineer. In total, "employees receive over 100 hours of quality education to foster premium service commitment, solve problems, set strategic quality plans, and generate new ideas". The Ritz-Carlton Hotel Company views this training as a critical part of effective employee involvement and empowerment (64:8-9).

All of the military organizations provide training on general TQM principles and customer-vendor relationships. However, NADEP goes a step farther. NADEP recognizes the importance of training customer contact employees, and mandates formal instruction on customer interaction techniques for all program officers and customer service personnel (27:3-3).

Customer Satisfaction Measurement Program Level Findings. The second level of findings concerns general practices of the organizations with regard to their overall customer satisfaction measurement program. The findings are as follows:

Development of CS Methods and Measures. All the organizations developed their own customer satisfaction measures and methods to suit their organization's needs (61:7-8; 64:14; 62:55; 72:2; 69; 67:1).

A commercial organization that exemplifies this finding is Federal Express. Unhappy with the reactive and incomplete nature of their traditional customer satisfaction measurement methods, Federal Express instituted a program to develop a more comprehensive and proactive approach to measuring customer satisfaction and service performance. Federal Express used the following *to do* list to develop this new approach:

- Define service quality from the perspective of the customer, not by internal standards
- Develop a means for measuring actual service failures, not simply overall percentages of service achievement
- Weight each category of service failure to reflect its relative impact on customer satisfaction
- continually track and measure performance against the 100 percent customer satisfaction and service performance goals
- Tie the customer satisfaction/service quality gauge to the Service component of the People-Service-Profit corporate objectives
- Provide accurate, immediate feedback so that employees can spur action and innovation toward the company's 100 percent customer satisfaction and service performance goals (62:55)

From this list of activities, Federal Express developed a 12 item performance based measure tracking system they called the "Service Quality Indicator" to guide their activities (62:55).

A notable example of measures and methods self-development in a military organization is the development of the external customer survey at AEDC. AEDC developed its own measures and method with input from its customers. First, AEDC developed a list of characteristics and objectives that it felt was important to its customers. This list was then provided to some of the Center's customers for comment. The customers reviewed the list and provided feedback concerning items to be added or deleted, and also assigned relative importance values for each performance characteristic and objective. This final list of mutually understood performance characteristics and objectives was then used to develop the external customer survey. A copy of this survey is found in Appendix B (67:1).

Tailoring of CS Measurement Methods. Not all organizations tailor their methods for each type of customer. However, all organizations do tailor the analysis of the data provided by these methods. For commercial organizations, the data analysis is tailored for each major customer segment. For military service organizations, the

relatively small number of customers allows the organizations to tailor data analysis for each customer (61:7-8; 64:14; 62:61-63; 72:2; 66:1; 69; 67:1).

Federal Express demonstrated the highest degree of method tailoring among the commercial organizations. To meet the needs of the various customer segments or niches it serves, Federal Express currently has six ongoing customer satisfaction studies in addition to the Service Quality Indicator System previously mentioned. They are: the Customer Satisfaction Study, the Targeted Customer Satisfaction Studies, the Comment Card System, the Customer Automation Study, the Canadian Customer Satisfaction Study, and the European Satisfaction Study (62:62-63; 63).

At AEDC, the external customer survey is not tailored to each customer because the survey was developed with input from the customers, and it reflects the performance attributes that are important to the customers. However, the analysis of the external survey is tailored for each individual customer. Customer and program identification information is gathered at the top of the survey, and is used by AEDC to take immediate action to satisfy each particular customer. The program information also enables AEDC to identify areas for improvement at the particular test facilities used in support of the program (66:1).

Combination of CS Measurement Methods. All organizations use a mix of methods to measure customer satisfaction. In addition, all organizations use one or more forms of surveys. For a majority of organizations, direct methods (surveys) are supplemented with indirect methods such as performance measures, market research, or complaint handling (61:6-1,7-2; 64:14-15; 62:53,56,60; 71:11; 72:1-2; 27:3-3; 66:1,4; 69).

Again, the commercial organization that best exemplifies this finding is Federal Express. Not only does Federal Express utilize several types of surveys ranging from comment cards to telephone interviews, but it also utilizes performance measure tracking

and complaint handling systems to ensure that it acquires the necessary information to improve its processes (62:53,56,60).

A notable example of using a mix of methods to measure customer satisfaction in military service organizations is AEDC's use of written surveys in combination with organizational performance metrics that are directly linked to customer satisfaction. The external customer survey measures the customer's satisfaction with AEDC's performance in meeting their expectations while the performance metrics measure how well AEDC is performing in areas directly associated with customer satisfaction such as meeting test schedules, satisfying test objectives, completing the tests within cost estimates, and reducing test costs (66:1,4).

Comparison of Methods. Although several methods are used by each organization to measure customer satisfaction, the results of these different methods are usually not compared to each other in a formal manner. The emphasis seems to be more focused on collecting information for process improvement rather than providing a quantitative measure of customer satisfaction (61:7-2; 64:14-15; 62:53,56,60-63; 71:11,13; 72:1; 27:3; 67:2).

Although all the commercial organizations compare and aggregate the various forms of customer satisfaction data for improvement planning, none of the organizations provided any evidence of a formal comparison procedure to compare the results of the various methods.

In general, the military organizations do not have a formal process for comparing the results of the methods. However, AEDC does compare the results of the direct methods with those from the indirect methods (performance metrics) (65:4-1). Also, NADEP compares the results of the independent written survey with the results of the monthly telephone surveys/interaction and face-to-face meetings (69).

Validity Determination of Measures and Methods. Not all the
organizations determine the validity of the measures or methods. However, a majority of
the organizations conducted extensive market research or contacted the customer directly
to determine what factors were important to the customer before developing their set of
measures. Consequently, a majority of the organizations have measures that have been
validated at one point or another (61:7-1; 64; 62:54-57; 72:3; 27:2-2; 66:2,3).

A commercial organization that exemplifies this finding is the Federal Express
Corporation. Although Federal Express does not provide evidence that it has an on-going
activity to determine the validity of its customer satisfaction measures, it has gone through
an extensive customer satisfaction research effort to develop a validated set of customer
satisfaction performance measures - the Service Quality Indicators (62:54-57). In
addition, Federal Express continues to conduct customer satisfaction research to
determine emerging requirements and identify performance shortfalls. Consequently, it
has the means to determine the validity of its measures either through formal or informal
means. It does not, however, cite validation of customer satisfaction measures as an
objective of these studies (62:60-63).

AEDC also involved customers in the development of its measures and methods.
First, AEDC developed a list of characteristics and objectives that it felt was important to
its customers. This list was then provided to some of the Center's customers for
comment. The customers reviewed the list and provided feedback concerning items which
should be added or deleted, and also assigned relative importance values for each
performance characteristic and objective. This final list of mutually understood
performance characteristics and objectives was then used to develop the external customer
survey (66:1). Further validation, according to AEDC is demonstrated by "very positive
customer feedback, an expanding commercial test workload, and building new facilities"

(67:2). The trend in customer satisfaction has increased continuously since 1988, and AEDC is now reaping the benefits (65:4-5).

CS Data for Benchmarking. All commercial organizations studied benchmark against their competitors with regard to customer satisfaction and other performance results (61:7-12; 64:15; 63). In contrast, the military organizations excluded customer satisfaction results from their benchmarking efforts. AEDC cited the desire to avoid interagency conflicts as a reason for avoiding direct comparisons between government facilities (67:1).

A commercial organization where the benchmarking of customer satisfaction results is a standard activity is AT&T Universal Card Services. UCS benchmarks its customer satisfaction results in a number of ways. UCS used its contact survey results to benchmark against its competitors and found that none of their principal credit card competitors surpassed its satisfaction result. In addition, UCS benchmarks share of the credit card market and found itself second in total accounts (64:7-12 - 7-13).

Currently, military organizations do not benchmark their customer satisfaction results to other government organizations or commercial organizations (71; 72; 27; 65; 67:1). AEDC and ASC suggest that this is not due to lack of knowledge of the benefits of benchmarking customer satisfaction results, but is due to the customers' desire to avoid interagency conflicts and a lack of a standard basis for comparison. AEDC customers felt that doing direct comparisons to other government aerospace ground test activities might create bad feelings between government organizations that frequently team up through large test programs (67:1,2). However, AEDC has recently convinced its customers of the benefits of benchmarking customer satisfaction results and operational practices, and these customers have agreed to begin supplying AEDC with benchmarking data. AEDC is now aggressively pursuing benchmarking activities through its strategic planning vision

(67:2). A benchmarking group is spearheading efforts to institutionalize benchmarking throughout the Center (67:2).

Procedure for Reviewing and Updating CS Measurement Methods. Despite the fact that all the organizations reviewed and updated their CS measurement methods, not many organizations defined a formal procedure for reviewing and updating their customer satisfaction measurement methods on a periodic basis (61; 64; 62; 71; 27; 65). For some organizations, changes to their methods and measures were the result of incidental discoveries of inadequacies with existing measures and methods rather than the result of a systematic procedure for updating methods and measures.

A commercial organization that exemplifies this finding is AT&T Universal Card Services. In the years between its creation and its receipt of the Baldrige Award, UCS has continuously revised its performance based measures and performance standards to maintain continuous improvement. These revisions, however, were the result of trial and error rather than a formalized, statistically based procedure designed to revise these measures. Despite this lack of a formal procedure, UCS had managed to spur continuous improvement through the persistence of its top management (63).

NADEP exemplifies this finding for the military organizations. NADEP initially used written surveys to measure customer satisfaction, but it had a low response rate and there was no control over who was filling out the survey. NADEP was unable to collect enough actionable data to make continuous process improvements or to take action in a timely manner to satisfy customers (69). To remedy this problem, NADEP developed other methods that did provide actionable data: phone surveys/interaction and face-to-face meetings with the customers (69). However, as with UCS, this change occurred through trial and error, and not through a formal process for ensuring methods were effective.

<u>Determination of Customer Repurchase Intentions</u>. Few organizations attempt to explicitly determine customer repurchase intentions (64; 62; 61:10; 71; 27; 65; 75:2). The notable exception to this finding among the commercial organizations is UCS. Through its follow-up research, UCS specifically asks its customers whether or not they would recommend UCS's products and services to their friends and associates (61:7-10).

NADEP is also an exception to this finding. NADEP asks its customers if they intend to take their business elsewhere and why on the independent written survey (75:2).

<u>Role of Economic Factors in Development of CS Measurement Methods</u>. The organizations did not identify economic factors as a major driver in the development of their customer satisfaction measurement methods (61; 64; 62; 71; 27; 65; 69).

Although economic considerations are naturally associated with commercial organizations, not one company cited it as a factor in the development of its CS measurement method. In fact, the case studies show that all the organizations have developed a customer satisfaction program that represents a sizable investment in terms of time and money (61; 64; 62).

In contrast to the guideline that measures and methods should be economically convenient to collect, Capt Phipps of the AEDC Quality Improvement Office feels that an effective measurement system requires commitment of considerable time and resources (67:2). He feels that "There's a tremendous amount of work involved and it takes time to develop an effective measurement system" (67:2). The work includes:

(1) identifying the critical services and products you wish to measure,
(2) establishing a critical few characteristics that you think are important to the customer and that will drive the appropriate behavior,
(3) communicating and coordinating those characteristics with the customers and the work force,
(4) establishing the measurement owners,
(5) developing the measurement data system from input to reporting, and
(6) the short-term and long-term monitoring of data points and trends to take action to actually drive customer satisfaction. (67:2)

In addition, Capt Phipps believes that effective measurement requires the following resources:

    (1) A data system with wide access.
    (2) Trained customer contact employees.
    (3) Customer objective owners.
    (4) Developing and holding periodic reporting and feedback reviews.
    (5) Communicating through periodic reports. (67:2)

Overall, the amount of time and resource commitment is considerable, but "the payoff potential far outweighs the maintenance cost" (67:2).

Customer Satisfaction Measures. The final level of findings concerns the practices and principles the organizations apply to their particular customer satisfaction measurement methods and measures. The findings are as follows:

Types of Customer Satisfaction Measures. In agreement with the finding that all organizations utilize a combination of methods for measuring customer satisfaction, all organizations also use several types of customer satisfaction measures. These measures can be categorized by the type of methods they are associated with such as self reports or performance based measures, or more generally by what type of information they solicit-either qualitative or quantitative data. With regard to the latter categorization, all organizations not only solicit quantitative customer satisfaction data, but also seek qualitative information (61:7-10 - 7-11; 64:14; 62:56-62; 74; 71:10; 72:2; 27:3-3;4-5; 65:4-1; 66:2,3; 68:1-8; 75:1-2).

A commercial organization that exemplifies this finding is the Federal Express Corporation. In the conduct of its telephone surveys, Federal Express not only asks customers to rate their level of satisfaction with a particular aspect of the service Federal Express provides, but it also asks customers for explanations regarding their responses (62:56-62; 74). Consequently, Federal Express collects quantitative data for statistical

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analysis and qualitative data to ascertain possible causes of notable satisfaction and dissatisfaction.

The measures used by the military organizations reflected their organization-specific data needs so there were no common measures across the military organizations. There were common areas, however, for the measures such as cost and schedule performance, responsiveness to customer, and general qualitative questions asking the customer to provide suggestions on how the organization might improve its service to the customer (66:2,3; 68:1-8; 75:1-2). The Air Force organizations both use a six point satisfaction-dissatisfaction scale for quantitative measures because it is a defacto standard within AFMC (66:2,3). NADEP uses a five point poor-excellent quantitative scale (75:1). All of the military organizations, however, use a combination of qualitative and quantitative measures. Notable examples of qualitative measures are found in the ASC Contracting survey, the AEDC external customer survey, and the independent NADEP written survey:

ASC Contracting

- What is the most mission impairing factor within contracting's control?
- How can contracting best assist you in your responsibilities?
- Please suggest specific improvements we can make that would increase your effectiveness. (68:6)

AEDC

- What is important to you as a customer that has not been addressed in this critique? (66:2)

NADEP

- Is NADEP responsive to your issues/concerns about products/services? Why/Why not?
- Are you considering going elsewhere for the same product or service? If so, why?
- Do you feel you get value for your money? Why/Why not? (75:2)

Customer Role in Defining CS Measures. A majority of the organizations sought customer feedback in the development of their CS measures (61:5-1,7-8; 62:54-57; 71:10; 72:2; 66:1).

Again, Federal Express exemplifies this finding for the commercial organization. Through the use of several customer satisfaction research efforts, Federal Express solicited customer inputs to develop its performance based Service Quality Indicators to measure customer satisfaction indirectly. These customer-defined measures allow Federal Express to take a more active role in ensuring service quality and customer satisfaction (62:54-57).

AEDC, as described earlier under *Validity Determination of CS Measures and Methods*, involved its customers in the development of the customer satisfaction measures used in its external customer survey (66:1).

Tailoring of Measures. Most of the organizations do not tailor their measures for different customers or customer niches. Typically, measures for written surveys are not tailored. However, organizations that use telephone or personal contact surveys do capitalize on customer feedback to seek more information regarding responses, which is essentially tailoring the interview for that particular customer (61:7-8; 64:14; 74; 72:2; 66:1; 67:1; 69; 75:1).

The previous discussion of Federal Express's telephone surveys provides a good example to support this finding. Although Federal Express has a standard set of questions for the customer, the direct contact with the customer allows Federal Express to probe more deeply to identify underlying causes of satisfaction or dissatisfaction (74). Consequently, a standardized method is essentially tailored in real-time as the customer responds to questions.

NADEP , which employs both phone and personal contact surveys, exemplifies this finding for military organizations. NADEP switched to these methods versus written

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surveys specifically to gather more actionable data through probing and clarification of the customers feedback (69). The phone surveys/interaction and face-to-face meetings thus use measures that are essentially tailored to the specific customer (69).

Statistical Analysis of CS Data. All organizations perform statistical analysis of their CS data. However, the level of analysis for all organizations has been limited to rudimentary analysis such as trend analysis and summary statistics reporting (61:7-8; 64:14-15; 62:62; 71:10; 72:3; 27:4-5; 65:4-1 - 4-3).

A commercial organization that exemplifies this finding is AT&T Universal Card Services. Although UCS utilizes a four point scale (poor, average, good, and excellent) to solicit customer satisfaction feedback, it does not treat the data as interval level data to perform its analysis. Instead, it aggregates the two highest levels of responses and tracks the percentage of customers with these responses, or it tracks only the highest response level. Through this approach, there are only two classes of customers: those that are completely satisfied and those that are not. Thus, the data are treated as nominal level data which limit the statistical analyses to rudimentary trend tracking and summary statistics determination (61:7-10 - 7-12).

All of the military organizations limit their analysis of the quantitative customer satisfaction data to summary statistics and trend analysis. An example of typical analysis in military organizations is that of ASC. Individual offices within ASC average the quantitative data to obtain an overall customer satisfaction index that they use to track the trend in overall customer satisfaction within the office (72:3).

CS Data and Performance Appraisals/Rewards/Recognition. There is a difference between commercial and military organizations concerning the linking of CS results to performance appraisals or rewards. Most commercial organizations have a procedure, either informal or formal, for feeding back the results of their customer satisfaction research into employee performance appraisals and/or employee rewards.

Military organizations, on the other hand, do not directly link CS results to performance appraisals (61:4-5,7-10 - 7-12; 62:32,35; 72:3; 27:3-2; 67:3).

Of the three commercial organizations, The Ritz-Carlton Hotel Company is the only organization that does not cite a linkage between its customer satisfaction data and its performance appraisal or employee reward systems. It does, however, explicitly recognize that its implementation of the gratuity system informally establishes this linkage (64:9). Linking customer satisfaction data obtained through its CS research efforts to performance appraisals or rewards would therefore be redundant. Although customer satisfaction measures do not provide direct incentives to employees to commit to customer satisfaction, other means exist to ensure this occurs.

Both AEDC and ASC note that existing regulations governing personnel performance appraisals hamper efforts to tie customer satisfaction results to performance appraisals (72:3; 67:2). However, both NADEP and AEDC note that customer satisfaction results do indirectly impact personnel performance appraisals. Because customer satisfaction permeates nearly all aspects of operations at these organizations, the performance appraisals are at least indirectly impacted by customer satisfaction results (27:3-2; 67:3) In addition, AEDC uses customer satisfaction results in the evaluation of the performance of its support contractors for award fee (67:3).

Frequency of CS Measurements. The frequency of CS research events varies widely according to the CS measurement method utilized and the purpose of the CS research. Commercial organizations have at least one method whereby CS data is collected on a daily basis. In contrast, military organizations, in general, do not collect CS data as frequently (61:5-2,7-8; 64:14-15; 62:10,55-63; 63; 72:3; 27:3-3; 65:3-3,4-2,4-5; 67:2; 69:2; 75:2).

A commercial organization that exemplifies this finding is the Federal Express Corporation. Federal Express measures customer satisfaction at various intervals

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depending on the CS measurement method utilized. On an annual basis, Federal Express measures the satisfaction level of its Canadian customers through the Canadian Customer Satisfaction Study. On a semiannual basis, Federal Express measures the satisfaction level of its European customers and Powership users through the European Customer Satisfaction Study and Powership User Satisfaction Study respectively. On a daily basis, Federal Express measures the satisfaction level of U.S. customers through the Customer Satisfaction Study and reports the results of the 2400 interview effort on a quarterly basis. In addition to these methods, Federal Express also utilizes comment cards and complaint handling systems which measure customer satisfaction whenever the customer wishes (62:55-63; 63). The most widely used CS measurement method, however, is Federal Express's Service Quality Indicator system which measures customer satisfaction indirectly on a transaction by transaction basis. This is notable considering Federal Express moves nearly 300 million packages each year to and from destinations in more than 130 countries (62:10,55-58).

Similarly, military organizations collect CS data on a periodic basis. The frequency of the data collection depends on the method used. Daily (or potentially daily) feedback is obtained only through customer complaint systems. The frequency of these complaints, however, do not approach those of the commercial organizations. Consequently, the primary methods used by military organizations collect CS data on a less frequent basis. For instance, AEDC collects CS data from its customers only after tests are completed or quarterly for longer test series (65:4-2). NADEP collects CS data monthly through its phone surveys/interaction and on an annual basis through its face-to-face meetings (69; 75:1). ASC gathers CS data on a center-wide basis biannually (72:3).

V. Conclusions and Recommendations

Introduction

This chapter will: (1) discuss the significance of the findings of this research, (2) discuss the merits and limitations of the overall thesis effort, and (3) provide some suggestions for future work based on this research. As one will find from the discussion, a set of general guidelines for developing a customer measurement program has emerged from the research.

Discussion of Findings

The findings in the previous chapter represent common principles among service organizations. These principles vary in the extent in which they comply with the guidelines enumerated in chapter two. These principles also vary to the extent to which they can be applied to service organizations in general. Thus, the discussion of these findings has been divided into two halves: findings that are consistent with chapter two guidelines and are widely applicable to service organizations, and findings that vary to some extent with the guidelines or are not widely applicable to service organizations. A majority of the findings fall into the first half and present no significant issues that must be addressed. Consequently, they are listed in summary. The second half of the findings, however, merits more discussion to allow customer satisfaction practitioners to determine whether or not to apply a particular guideline or principle to their situation. Therefore, these findings are discussed individually.

Widely Accepted and Widely Applicable Findings. A majority of the findings support the establishment of a general set of guidelines for the development and execution of a customer satisfaction program. These findings are widely accepted among quality experts and seem to be widely applicable to service organizations, be they commercial or

military organizations. Table 5-A below lists the principles associated with the first level of data analysis, the organization level findings.

Table 5-A. Widely Accepted and Widely Applicable Organization Level Findings

No.	Finding Title	Principle
1	Customer Focus Program	Organizations should develop a formalized program for determining customer needs and expectations. This program should consist of several methods in addition to customer satisfaction measurement methods to ensure adequate determination of customer needs.
2	Top Management Commitment	Top management commitment is a critical factor to the success of any quality program, especially a customer satisfaction measurement program. Thus, top management must not only continuously verbalize its commitment, but must also actively demonstrate this commitment through action to communicate its commitment to the organization in tangible terms.
3	Corporate-wide Buy-In	Corporate-wide buy-in as with top management commitment is a critical factor in the long term success of a quality program. Organizations must elicit this commitment from their employees by striving to continuously communicate their quality philosophy and to develop methods and procedures that encourage commitment to this philosophy.
4	Dissemination of Customer Satisfaction Information	Organizations must widely disseminate the results of their customer satisfaction measurement methods to ensure that all employees have access to CS data to guide improvement efforts in their areas. In agreement with the finding number 2, CS data must be regularly reported to top management to guide its planning efforts.
5	CS Data and Continuous Improvement	CS data is a valuable tool for driving continuous improvement. CS data alone, however, will be less likely to result in improvement if no formal procedure exists to channel this data into the planning and control functions of the organization. Therefore, organizations must develop, document, and follow a formal methodology to ensure CS data are utilized to guide the operations of an organization.
6	Empowerment of Customer Contact Employees	All employees, especially customer contact employees, must be empowered to take positive action to satisfy the customer. This ensures that customer needs are promptly met and sources of dissatisfaction are promptly mitigated. In addition, this avoids the perception of customers that the customer contact employee is powerless to help them which is a definite source of dissatisfaction.
7	Training of Customer Contact Employees	In order for customer contact employees to be empowered to address the needs and expectations of the customer, they must be formally trained to do so. Untrained employees are seldom fully qualified to ensure that customers are satisfied.

Table 5-B below lists the principles associated with the customer satisfaction

program findings from the previous chapter.

Table 5-B. Widely Accepted and Widely Applicable CS Program Principles

No.	Finding Title	Principle
8	Development of CS Methods and Measures	It is unlikely that any other organization has developed a CS measurement method or set of CS measures that suit the needs of one's particular organization and customer base. Thus the practice of copying CS measurement methods and measures without modification is seldom productive. The only organizations worth copying without modification are those organizations that have already taken one's customers.
9	Tailoring of CS Measurement Methods	The tailoring of CS measurement methods for particular customer niches allows an organization to better meet the needs of that customer niche. If tailoring the method is not feasible, then an organization should at the very least tailor the data analysis.
10	Combination of CS Measurement Methods	Organizations must utilize a combination of methods to ensure that the customer needs and expectations are adequately addressed.
11	Types of Customer Satisfaction Measures	Consistent with the need to use various CS measurement methods, organizations must also use a variety of CS measures as well. Although quantitative measures provide substantial information, organizations should also utilize qualitative measures to identify emerging needs and expectations.
12	Customer Role in Defining CS Measures	The best authorities for defining the measures which will lead to customer satisfaction are the customers themselves. Therefore, organizations should involve the customers in the measure development process.
13	Tailoring of Measures	The tailoring of measures allows an organization to better track customer needs and expectations. Because written surveys do not facilitate this activity, more direct forms of contact surveys are more effective. Telephone surveys are particularly effective because they allow the tailoring of measures and are relatively inexpensive in comparison to more direct forms of contact.
14	Frequency of CS Measurements	Although the frequency of CS measurements differs according to the method used, all organizations should provide the opportunity to collect CS data whenever employees come in contact with customers. This is generally best accomplished through a complaint or request handling system.

Controversial or Limited Applicability Findings. Not all the findings provided

principles that were widely accepted or widely applicable to all service organizations.

These findings and their associated principles are discussed individually in this section to

provide a basis for CS program practitioners to rationally assess the desirability and applicability of these principles to their situation.

Comparison of Methods. One finding that seems to contradict sound research principles is the finding that the results of the different CS measurement methods utilized by an organization are usually not compared to each other in a formal manner. The emphasis seems to be more focused on collecting information for process improvement rather than providing a quantitative measure for customer satisfaction.

Although process improvement is a primary objective of CS measurement programs, it is not the sole objective. In addition, collecting process improvement data in no way precludes the formal comparison of CS data. Therefore it was surprising to find that CS results from different methods were not formally compared to each other. Doing so would provide a means to validate the different measures and methods which is a valuable effort given the constantly changing nature of customer needs and expectations.

No extenuating circumstances existed in the award documentation that justified the failure of these quality organizations to develop a formal program to perform this function. Therefore, it seems fit to conclude that the formal comparison of CS data results is an area that could be improved for these quality organizations.

Validity Determination of Measures and Methods. A closely related finding is that not all the organizations determine the validity of their CS measures or methods. Although a majority of the organizations conducted extensive market research or contacted the customer directly to determine the factors which were important to the customer before developing their sets of measures, the value of this initial validation effort becomes increasingly suspect as time progresses. Chapter two discussed in detail the temporary nature of customer needs and expectations. Given this assertion, it is imperative that organizations periodically validate their measures and methods to ensure that their efforts are properly focused to effectively satisfy the customer.

Although not expressly stated, a possible mitigating circumstance for the omission of this function is the short duration of some customer-service provider relationships. If customer needs and expectations are not likely to change during the extent of the relationship, the initial validation effort should suffice. If the service organization seeks long term relationships, however, periodic validation is a must.

Procedure for Reviewing and Updating CS Measurement Methods. Another finding closely related to the validation and method comparison findings is the finding that not many organizations defined a formal procedure for reviewing and updating their customer satisfaction measurement methods on a periodic basis. Consequently, improvements were the result of the discovery of inadequacies with existing measures and methods rather than the result of a systematic procedure for updating methods and measures. Although improvement occurred despite the lack of a formal procedure for reviewing and updating CS measurement methods, these improvements were reactive rather than proactive. Consequently, it would not be surprising to find that a significant number of customers were lost or significantly dissatisfied before these changes were instituted. This area is a definite candidate for improvement among these service organizations.

CS Data for Benchmarking. A finding that does not bode well for military organizations is that they do not benchmark their customer satisfaction results while all commercial organizations do. Benchmarking is a fundamental quality concept with benefits that have been well documented in quality literature. The omission of this process among military organizations was surprising. AEDC cites the desire to avoid interagency conflicts as a reason for avoiding direct comparisons between government facilities (67:1). This politically sound explanation points to a problem among government organizations. Political factors are much more influential in the conduct of government business than sound quality principles. With a shrinking defense budget, organizations are reluctant to

admit inefficiencies especially in comparison to like organizations for fear of reduced funding. The challenge here is to develop CS measures that allow an organization to benchmark to improve processes and increase customer satisfaction without incurring the wrath of another organization or worse a congressman.

Determination of Customer Repurchase Intentions. Another finding that raises some concern is the finding that few organizations attempt to explicitly determine customer repurchase intentions. Most organizations seem to rely heavily on the assumption that consumer loyalty is a natural consequence of customer satisfaction. Although this has been shown to be generally true for the highest levels of customer satisfaction, consumer loyalty is by no means assured.

A mitigating factor however, is the fact that all commercial organizations track only the highest levels of customer satisfaction rather than tracking a mean customer satisfaction level. With this approach, the risk of an inconsistency between customer satisfaction and consumer loyalty has been mitigated. It would, however be easy to improve the measurement approach by incorporating this question into their CS measurement methods. For military and commercial organizations alike, the practice of soliciting repurchase intentions or recommendation information would be an easy self-check to determine whether or not the customer satisfaction had been properly operationalized.

Role of Economic Factors in Development of CS Measurement Methods. An encouraging finding is that organizations did not identify economic factors as a major driver in the development of their customer satisfaction measurement methods. Research literature typically discusses economic factors as a primary influence in the development of a research instrument. Although the organizations studied generally utilized economically viable instruments to measure customer satisfaction, they did not seem to give economic factors much weight in developing their CS programs. In fact, the CS program of most of

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the organizations represented a sizable investment in time, money, and effort. Therefore, a general principle to be developed from this finding is that the need for particular types of information is the driving force in the development of CS measurement methods rather than economic considerations.

Statistical Analysis of CS Data. Another finding is that all organizations perform statistical analysis of their CS data. Although the level of analysis for all organizations has been limited to rudimentary analysis such as trend analysis and summary statistics reporting, this level of analysis is perfectly consistent with the ordinal rather than interval level of data they are collecting. What is even more promising is the tracking of only the highest levels of customer satisfaction which essentially treats the data as nominal level data. This treatment most closely agrees with the findings of researchers that only the highest levels of customer satisfaction lead to significant consumer loyalty.

CS Data and Performance Appraisals/Rewards/Recognition. The final finding is perhaps the most controversial. This study found that there is a difference between commercial and military organizations concerning the linking of CS results to performance appraisals or rewards. Most commercial organizations have a procedure, either informal or formal, for feeding back the results of their customer satisfaction research into employee performance appraisals and/or employee rewards. Military organizations, on the other hand, do not directly link CS results to performance appraisals.

Quality literature warns of the dangers of linking quality and customer satisfaction measures to performance appraisals and rewards. The argument is that this linkage may result in the manipulation of measures or a reluctance among employees to raise their goals or to dispense with easily attainable goals that have become obsolete. Yet, the commercial organizations seem to assume some level of risk that this manipulation or reluctance may occur rather than rely solely on employees adhering to quality for quality's sake. Military organizations, on the other hand avoid this practice. Ensuring the validity

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of its measures, however, does not seem to be the motivating factor to the military. Complying with the limitations set out for federal agencies seems to be the primary motivating factor.

This study was not able to judge the merits and disadvantages of linking customer satisfaction measures to performance appraisals and rewards. However, if an organization does decide to link CS data to performance appraisals and rewards, it must be diligent to ensure that this practice does not lead to the sacrificing of the primary objective, customer satisfaction, to the optimization of the linked measures.

Strength and Weaknesses of Thesis

As mentioned in the previous chapter, there is little statistical support for these conclusions. Statistical rigor was sacrificed to allow the study to probe more deeply into the subject matter. The depth of coverage allowed by this approach was the strength of this study. A potentially more significant limitation to this study is the premise that the organizations under study have sound quality and CS measurement programs because they have received a quality award. If this premise is incorrect, the ability of the findings to support the arguments would be limited. Although this limitation would be significant, the practices of the subject organizations continue to constitute the state-of-the-art in the implementation of quality, and customer satisfaction in particular. As the findings show, the majority of the findings agreed with the quality literature which provides some assurance that the practices of these organizations are sufficiently sound to merit citing.

A less severe problem was the inability of some organizations to provide more specific information on their measures and practices. Although this impacted the data available to this study, there was more than enough detail provided to develop numerous findings.

Another minor problem experienced by this study was the selection of ASC as a case study. ASC was much too large and diverse an organization to provide information

that was truly corporate-wide. Quality is at many stages in the various organizations that make up ASC. Consequently, it was difficult to cite examples of ASC-wide practices to add to the collection of common practices. Future case studies should take more careful steps to ensure that cases considered exhibit sufficient internal homogeneity to be cited as a single entity rather than a collection of entities. The selection of five other cases in addition to ASC, however, assured that sufficient support was available to identify common practices. Consequently, the study was not significantly affected by the selection of ASC as a case.

This study has identified the common practices among quality leaders in the commercial and military sector. It has identified these practices along with sufficient information for CS program practitioners to determine the applicability of these practices to their situations. Most of all, it has provided evidence that, in general, the principles identified by quality *gurus* do indeed work. This should provide practitioners enough support to advocate the use of these principles in developing their CS program.

Recommendations for Future Work

Despite the accomplishments of this study, there are a number of future studies that could be performed to augment the findings of this study. One candidate study would be to pursue the statistical support for the principles defined in this study. Given the universal nature of many of these principles, there no longer is a need to limit the study to service organizations to keep the study relevant. The research study's sample could consist of all the Baldrige Award recipients or possibly the Fortune 500. Although a wider sample will limit the amount of detail covered, the study would provide some valuable insight into the state of customer satisfaction programs in the commercial sector and provide more impetus for government programs to recognize the relevance of these practices to their operations.

Another potential study would be a longitudinal case study of an organization that adopted the principles defined in this study. This research effort would provide even more support to argue that quality and customer satisfaction principles do indeed work in the government sector. If problems are identified, then the study would provide a list of issues that must be addressed, such as the reluctance among service organizations to benchmark against similar government agencies.

There are many other studies that are possible from this pilot study. This research effort has identified many principles that merit further exploration. Any work to further this line of research would provide information in an area that to date has been relatively replete with assertions lacking with facts.

Appendix A: Case Study Questionnaire

Section A: Precondition Questions

A1. Who are your organization's customers and how do you solicit their expectations and requirements?

A2. Do you have top management backing for your customer satisfaction program?

A3. Do you have corporate-wide buy-in for your customer satisfaction program?

A4. To whom do the customer satisfaction measurement results go to and how are the data used to improve processes?

A5. Do the results guide the operations of the organization? If so, how?

A6. Are employees trained on how to interact with customers to satisfy them?

A7. Are the employees empowered to resolve customer problems in a timely manner?

Section B: General Methods Questions

B1. Did you develop your own customer satisfaction measures and methods to suit your organization's needs or did you essentially copy another organization's?

B2. Do you tailor these methods for each type of customer?

B3. What method(s) do you use to measure customer satisfaction?

B4. Do you use more than one method to measure customer satisfaction? If so, how are the results of the methods compared to each other?

B5. Do you determine the validity of these measures? If so, how (compare with return business?)?

B6. Do you benchmark against your competition (if you have some) or against "the best" in some particular area?

B7. Are the method(s) revised and updated periodically? If not, why not?

B8. Do you attempt to determine the repeat business intentions of the customer?

B9. Were the data for these measures economically convenient to collect (time and resources)?

Section C: Direct Methods Questions

C1. Are these measures qualitative or quantitative or both?

C2. Do your customers help develop these measures? If so, how?

C3. Do you tailor measures for each type of customer? If so, how?

C4. Do your measures support the organizations goals and objectives?

C5. Do your measures allow for the statistical analysis of the data provided by these measures? If so, is statistical analysis performed?

C6. Do you ask the customer what is important to him?

C7. Do these customer satisfaction measurement results feed back into unit or personnel performance appraisals and rewards?

C8. How often do you measure customer satisfaction?

C9. Are attempts made to minimize the response burden on the customer?

Section D: Indirect Methods Questions

D1. What types of measures do you use (e.g., performance based, self reports, complaints)?

D2. Are these measures qualitative or quantitative or both?

D3. Do your customers help develop these measures? If so, how?

D4. Do your measures support the organizations goals and objectives?

D5. Do your measures allow for the statistical analysis of the data provided by these measures? If so, is statistical analysis performed?

D6. Do these customer satisfaction measurement results feed back into unit or personnel performance appraisals and rewards?

D7. How often do you measure customer satisfaction? Why?

Appendix B: Sample CS Measurement Instruments

AEDC Performance Report

(Please return the completed form to AEDC/DXI, Arnold AFB TN 37389)

1. Date:

2. Facility	3. AEDC Project Number	4. Name/Organization/Address/Phone Number

5. What is AEDC's Role in Your Program? (Check Any Which Apply)

a. Support Flight Test
b. Preflight Qualification
c. System Acquisition (Specify Phase): ___
d. Research & Development
e. Other (Specify): ___

6. To Answer Questions 7 through 11, Use the Following Rating Scale (Circle One Choice)

1 Very Unsatisfied
2 Unsatisfied
3 Somewhat Unsatisfied
4 Somewhat Satisfied
5 Satisfied
6 Very Satisfied

(Please Comment If You Rank 1, 2, or 3)

7. How did you rate the overall management of your program? (Circle One Choice)

	1	2	3	4	5	6	NA
a. Project Planning and Scheduling	1	2	3	4	5	6	NA
b. Communications	1	2	3	4	5	6	NA
c. Test Execution	1	2	3	4	5	6	NA
d. Post Test Support	1	2	3	4	5	6	NA
e. Safety	1	2	3	4	5	6	NA
f. Cost Control	1	2	3	4	5	6	NA

8. Comments

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B-2

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9. How Well Did AEDC Help You Meet Technical Objectives? (Circle One Choice)

	1	2	3	4	5	6	NA
a. Facility Capability	1	2	3	4	5	6	NA
b. Technical Abilities of Project Team	1	2	3	4	5	6	NA
c. Test Precision Design And/Or Shop Fabrication	1	2	3	4	5	6	NA
d. Adequacy and Availability of Data Systems	1	2	3	4	5	6	NA

10. Comments

11. How Well Did the Actual Test Compare to Your Expectations? (Circle One Choice)

	1	2	3	4	5	6	NA
a. Execution of Project Plan	1	2	3	4	5	6	NA
b. Maintaining Schedule	1	2	3	4	5	6	NA
c. Facility Performance	1	2	3	4	5	6	NA
d. Quality, Quantity, Timeliness of Data	1	2	3	4	5	6	NA
e. Responsiveness to Changes	1	2	3	4	5	6	NA

12. Comments

13. Suggestions (of Importance) (Check With Specifier On Each Block Checked)

a. Data Environment
b. Instrumentation
c. Test Measure
d. Reporting
e. Quality Of Life/Base Support
f. Other

14. Comments

15. What Is Important To You As A Customer That Has Not Been Addressed In This Critique? (Attach Additional Comments On Continuation Pages)

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Cherry Point NADEP
Customer Questionnaire

The Customer Questionnaire provides feedback regarding quality of products and evaluation of services. It is used to improve processes, products, and build customer advocacy.

PROGRAM: _____

EVALUATOR: _____

	EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
	5	4	3	2	1

A. Aircraft, Engines, Components

(1) Overall Workmanship
(2) Paint, protection, free of corrosion
(3) Flight controls: rigging & installation
(4) Power plants: Rigging
              Test & Operation

(5) Records
(6) Egress Systems

B. Services Assistance

(1) Response to customer's request
(2) Response to discrepancy reports
(3) Response to engineering investigations
(4) P&E field teams
(5) Liason - visits - PHONCON

ORGANIZATION: _____

POC: _____

COMMENTS: _____
_____
_____
_____

(Followed by "tailored-to-customer" questions)

B-3

NAVAIR (NADEP) Written Survey

NADEP Evaluated: Cherry Point
Survey Period: _____
Evaluating Customer: _____

POC: _____
Phone Number: _____
Date of Evaluation: _____

PDCT/SERV	Sched Effectiveness		Quality of Product "Workmanship"					Trend in Quality		POC Avail?	
	On-Time	Late	EXC	Good	Fair	Marg	Poor	Better	Worse	Yes	No
A-4 SLDM											
C130 SLDM											
H46 SLDM											
AV8B AIEPD											
T58 RWK											
T400 RWK											
Components											
MOD Efforts											
PSD/CVA											
E/R-In SVC REPR											
Others:											
1											
2											
3											
4											

Supporting Comments: _____

Other Areas of Interest: _____

Is NADEP Responsive to Your Issues/Concerns about Products/Services? Why/Why Not? _____

Are you considering going elsewhere for the same product or service? If so, why? _____

Do you feel you get value for your money? Why/Why not? _____

Please provide additional comments including suggestions on how we can improve on back -

B-4

CONTRACTING

CUSTOMER SATISFACTION ASSESSMENT

1 Very Dissatisfied	2 Dissatisfied	3 Somewhat Dissatisfied	4 Somewhat Satisfied	5 Satisfied	6 Very Satisfied	NA Not Applicable

USE SCALE ABOVE TO INDICATE YOUR ASSESSMENT OF THE FOLLOWING FACTORS

<u>ASSESSMENT</u>

I. PEOPLE ASSIGNED

1. Qualification of Personnel? ☐
2. Staffing Level Supports the Mission? ☐
3. Responsiveness of Personnel? ☐
4. Performs as a Team Player in Support of the Mission? ☐
5. Turnover of Personnel? ☐

<u>SPECIFIC COMMENTS AND INSIGHTS ON ANY AREAS RATED HIGH OR LOW:</u>

_____
_____
_____
_____
_____
_____

II. CONTRACTING CONTRIBUTION TO SPO

1. Quality of Functional Products? ☐
2. Timeliness of Functional Products? ☐
3. Overall Execution of Functional Mission? ☐
4. Contribution to Up-Front Program Planning and Strategy? ☐
5. Advising Program Management of Contracting/Management Risks to Program Success? ☐
6. Resolution of day to day contract problems with the contractor? ☐

<u>SPECIFIC COMMENTS REGARDING CONTRACTING PROCESSES:</u>

_____
_____
_____
_____
_____
_____

B-5

1. Very Dissatisfied	2 Dissatisfied	3 Somewhat Dissatisfied	4 Somewhat Satisfied	5 Satisfied	6 Very Satisfied	NA Not Applicable

USE SCALE ABOVE TO INDICATE YOUR ASSESSMENT OF THE FOLLOWING FACTORS

ASSESSMENT

III. CONTRACTING REGULATIONS/POLICIES

1. Applicable to SPO Mission? ☐
2. Clearly Defined and Documented? ☐
3. Currency? ☐
4. Logical/Sensible/Executable? ☐

SPECIFIC COMMENTS REGARDING CONTRACTING REGULATIONS/POLICIES:

_____
_____
_____
_____

IV. SPECIAL SUPPORT
This Section Is Unique to Each Functional Two Letter and Specific Questions are at Their Discretion

1. Training Provided to Source Selection Team During Recent Source Selections? ☐
2. Technical Support Provided During Recent Source Selections? ☐
3. Training and Support for Completion of Contractor Performance Assessment Reports (CPARS)? ☐

SPECIFIC COMMENTS REGARDING SOURCE SELECTION:

_____
_____
_____
_____

V. OTHER TOPICS

1. What Is the Most Mission Impairing Factor Within Contracting's Control?
2. How Can Contracting Best Assist You in Your Responsibilities?
3. Please Suggest Specific Improvements We Can Make That Would Increase Your Mission Effectiveness.

_____
_____
_____
_____
_____

Appendix C: Case Study Questionnaire Responses

Section A: Precondition Questions

A1. Who are your organization's customers and how do you solicit their expectations and requirements?

AT&T Universal Card Services

UCS serves the general public. It solicits and collects customer expectations and requirements through a number of means as shown in Figure 7.1 of the award write-up. "Figure 7.1 identifies our [UCS] four key customer listening posts:
o Customer expectation and needs research,
o Performance research,
o Direct customer feedback,
o Process management" (61:7-1 - 7-2)

The Ritz-Carlton Hotel Company

The Ritz-Carlton Hotel Company serves the general public. "Customer Satisfaction is gathered in a number of ways: (1) from extensive research by the travel industry; (2) from focus groups of different market segments; (3) from preferences detected by all employees who come in contact with our customers daily; (4) from customers who have just used our products and services; (5) through our guest and travel planner satisfaction system; (6) from information collected at various points in our new hotel development" (64:13).

Federal Express Corporation

Federal Express serves the general public as well as businesses. It solicits customer expectations and requirements in a number of ways. These methods are: customer satisfaction studies, targeted customer satisfaction studies, comment cards, customer automation studies, Canadian customer satisfaction studies, and European satisfaction studies (63). In addition, customer data is collected through Federal Express's customer complaint handling system (62:53).

Aeronautical Systems Center

Customers are the Air Force MAJCOMS such as ACC, AMC, AETC. Internal customers exist within ASC (the SPO's are obvious customers of the functional organizations). Aerospace industry and other industries are also considered an internal (external) customers. Customer requirements and expectations are

solicited during regular visits with the customer (reviews, etc.) and during "Customer Days" such as ACC Day and AMC Day. Customer expectations and requirements are also collected through qualitative questions on some of the customer satisfaction surveys (71,72).

Cherry Point Naval Aviation Depot

Navy, Marine Corps, Army, Air Force, and Coast Guard, NASA, Military forces of allied nations. Customer liaison office interacts monthly with customers to learn of changes in requirements, etc. Customers are given the names and telephone numbers of depot personnel to contact if needed (27:ii, 3-3).

Arnold Engineering Development Center

Customers are AFMC's acquisition, logistics, test centers, and laboratories; the Army and Navy testing community; NASA and DNA, as well as leading commercial aerospace manufacturers. Customer requirements and expectations solicited through Customer Roudtables such as AEDC Customer Days. Internal customers are recognized, but no specific types of internal customers are named. (65:1-2,3-5).

A2. Do you have top management backing for your customer satisfaction program?

AT&T Universal Card Services

Yes. "Engraved in the lobby of our [UCS] lobby is: 'Customers are the center of our universe.' This sets the tone for everything that happens at Universal Card Services (UCS). Our President and Chief Executive Officer (CEO) brought to UCS a vision of consistent delivery of world-class customer service and value, achieved through long-term investment in our customers, people, and technologies" (61:1-1).

Top management support is evident in the activities conducted by UCS's President/CEO and the Business Team through a number of activities. They are:

> o Meeting with customers,
> o Listening to customers' calls,
> o Reviewing daily process measures,
> o Meeting with suppliers quarterly,
> o Benchmarking visits,
> o Reviewing/using customer feedback,
> o Reviewing program management process monthly,
> o Co-chairing monthly Customer Listening Post meeting,
> o Hosting team sharing rallies,
> o Leading employee focus groups,

o Holding all-employee meetings quarterly,
o Owning Baldrige self-assessment categories (61:1-1)

The Ritz-Carlton Hotel Company

Yes. Top management acknowledges "that highly personalized customer satisfaction is our [Ritz-Carlton's] highest priority and is everyone's job" (64:4).

Federal Express Corporation

Yes. The two fundamental corporate objectives communicated by top management at Federal Express, notably Chairman and CEO, Frederick W. Smith, are: 100 percent customer satisfaction, and 100 percent service performance (62:14).

One notable demonstration of top management's commitment to customer satisfaction is the linking of Federal express's most prestigious company-wide award - the Golden Falcon - directly to complimentary reports from customers. The Golden Falcon award includes 10 shares of stock and a congratulatory phone call or visit from James L. Barksdale, Federal Express's Chief Operating Officer (62:35).

Aeronautical Systems Center

Yes. TQM and commitment to customer satisfaction are spearheaded by the commanding officer. General Ferguson, then ASC commander, was very committed to the TQM program. He created the TQ office to help implement TQM. General Fain, the current ASC commander is also very committed. General Fain has shown his commitment to the quality program and customer satisfaction at ASC through his recent actions. General Fain has instituted the Unit Self Assessment via the QAF criteria and has assigned top managers to carry it out. Section 7, Customer Focus, is headed up by Dr Barthelemy (YW), and will be a major part of the next ASC Quality Council. "The session in August may well develop more specific actions to ensure that there is a strong commitment to our customers" (72:1; 71:11,17).

Cherry Point Naval Aviation Depot

Yes. TQM and customer satisfaction program are spearheaded by the commanding officer. Top management led the way by undergoing TQM training first and then personally training many of the depot employees. Two actions which demonstrate top management's commitment to continuous improvement and customer satisfaction are the abolishment of the Quality Assurance and Reliability Department and empowerment of front-line employees to satisfy customers (27:2-1,2-2).

Arnold Engineering Development Center

Yes. TQM and customer satisfaction programs are spearheaded by the commanding officer. "Customer satisfaction is taken *very seriously* here" (66:1). Every project manager at AEDC strongly encouraged by top management to obtain feedback from the customers. If the program manager doesn't obtain feedback, top management wants to know why. Every test customer critique (external customer survey is reviewed thoroughly by several levels of management to look for areas "where immediate action can be taken to make a less-than-satisfied customer satisfied" (66:1). The AEDC commander personally leads a quarterly review of the customer critiques with the rest of the Center staff directorates and contractor general managers. The commander also leads a quarterly review of the AEDC customer objective report with the six customer objective owners (these objectives have built-in measures which constitute an indirect method of measuring customer satisfaction which is discussed in chapter four) (65; 66).

A3.   Do you have corporate-wide buy-in for your customer satisfaction program?

AT&T Universal Card Services

Yes. A significant motivator for corporate-wide buy-in is the linking of UCS's recognition and performance systems to quality achievements that lead customer delight (61:ix). The quality achievements were tied to quality measures which UCS terms the "bucket of measures." The performance of the company with regard to these measures were critical to determining monetary compensation. "If the company as a whole achieved the quality standards on 95% of the indicators on a particular day, all the associates-or non-managerial employees-'earned quality' for the day, and each 'quality day' meant a cash bonus, paid out on a quarterly basis" (73:4).

The Ritz-Carlton Hotel Company

Yes. "Company-wide, employees are devoted to our organization's [Ritz-Carlton's] principles. A full 96% of employees said 'excellence in guest services' is a top priority, even though we have added 3,000 new employees over the past three years" (4:4).

Federal Express Corporation

Yes. The practice of using policies based on "pay for performance" for various Federal express employee reward and compensation systems ensure corporate-wide buy-in for the customer satisfaction program (62:31).

Aeronautical Systems Center

There is management commitment at the 2-letter level. All of the functionals and most of the SPOs have some type of program in place to collect CS data. At lower levels, the answer is it depends. TQM implementation is at different levels throughout ASC due to its size and diversity of programs and organizations. Bottom line answer is no-- it is not corporate wide (72).

Cherry Point Naval Aviation Depot

Yes. At least within the portions of the MCAS and Depot where TQM has been implemented. Implementation continuing. "Employees come to work with a sense of anticipation and relish and leave with a sense of accomplishment and pride" (27:2-3). CS program buy-in not specifically addressed.

Arnold Engineering Development Center

Yes. Corporate-wide buy-in was established through the customer objectives. The objectives are institutionalized and have a *critical few* related measures or metrics which drive appropriate customer-oriented behavior. These objectives were developed through strategic planning and alignment of the objectives with the goals of the nation, the Air Force, and the parent organization, AFMC. These objectives were communicated to everyone in the Center through the AEDC strategic plan. They are taken very seriously by everyone in the organization, from the customer contact employees to the board room (66:1).

A4. To whom do the customer satisfaction measurement results go to and how are the data used to improve processes?

AT&T Universal Card Services

Access to the customer satisfaction measurement results vary according to the method used to collect the data. In general, customer satisfaction results are accessible by just about every employee from contact associates to top management through the daily tracking of performance measures linked to customer satisfaction. Daily performance results are available to every customer contact employee through the use of video monitors throughout UCS (61:5-2). The primary UCS unit that uses the information, however, is the Customer Listening Post Team which is a cross-functional team headed by Business Team members. This team aggregates and acts on the data collected to address "both existing policy and procedural issues impacting day-to-day customer relationship management and the long-term formal strategic planning efforts" (61:7-1).

The Ritz-Carlton Hotel Company

Customer satisfaction measurement results go to the management of the individual hotels as well as the national management (64:14) for action planning. To improve processes, customer satisfaction data goes through Ritz-Carlton's strategic planning process (64:14). The most insightful source of information on the flow of customer satisfaction information and how this flow relates to process improvement is available on page 13 of the application summary.

Federal Express Corporation

Through the use of Federal Express's Service Quality Indicators (SQI) which are directly linked to customer satisfaction, every employee has access to customer satisfaction results (62:55). For the more traditional customer satisfaction measurement results derived from the various customer satisfaction studies, access has been limited primarily to corporate planners and top management.

Aeronautical Systems Center

CS results are usually returned to the 2-ltr quality coordinator and used at the 2-ltr or IPT level as input into improvement and strategic planning sessions. Periodically, the data is sent to the base focal point for each particular Mission Element Board (MEB). This is where the numbers get averaged and sent up to AFMC. ASC doesn't use it, but AFMC wants it. No specifics were provided on individual organizations on how they use their CS results to improve processes (71:1).

Cherry Point Naval Aviation Depot

The customer satisfaction results go to the people actually doing the repair work within one day so the customer can get an answer in 2 working days. Results used to continuously improve processes at all levels (by taking action on the customers comments). No specific description of the flow of the results given (27:3-3).

Arnold Engineering Development Center

The results of customer satisfaction surveys are used throughout the organization to take immediate action to satisfy customers and to improve processes in the long term. Immediate Response: Surveys are received and reviewed by project managers and test organization management for immediate action and feedback to customers. Short Term: Each new survey received is briefed to the AEDC Staff weekly for information or action. Quarterly: Quarterly summary reports produced and reviewed each quarter by the customer objectives owners and AEDC Staff. Annually: Annual summary reports display annual trends for the current year and present year. Improvement opportunities and improvement results are also covered as part of all the reviews above. The customer metric (#5) and performance metrics (#1-4) drive the appropriate behavior- focusing on the

customer and his needs/requirements and doing what is necessary to satisfy him (66:1; 67:1).

A5. Do the results guide the operations of the organization? If so, how?

AT&T Universal Card Services

Yes. The data is used by the Customer Listening Post Team to determine short term and long term plans as shown in Figures 7.1 and 3.1 (61:3-1,7-2).

The Ritz-Carlton Hotel Company

Yes. The Ritz-Carlton Guest and Planner Satisfaction Measurement System provides a structured procedure for utilizing customer satisfaction information to guide the operations of the organization to improve processes (64:13). Refer to page 13 of the application summary to see how this is done.

Federal Express Corporation

Yes. Customer satisfaction results are used to identify and correct reasons for less than complete satisfaction with FEDEX and guide strategic planning (63).

One notable example was the case when a targeted study of Canadian customers reveals that they were not satisfied with the geographic convenience of dropbox and business service center locations. Federal Express responded to the information by going through a major expansion effort to add dropbox sites in the Canadian market (62:63).

Aeronautical Systems Center

Generally yes, but it varies from organization to organization (depending upon the level of implementation). Specifics are not given on how. In general, customer satisfaction is the top priority at ASC. With this in mind, the organizations within ASC operate with that in mind - i.e. they do whatever is necessary to keep the customer happy (71:11,13).

Cherry Point Naval Aviation Depot

Yes, through action-oriented measures. Customer satisfaction is top priority at NADEP because of the level of competition with other DoD activities and private industry. Customer satisfaction results are immediately directed to the shop floor to address customer concerns. The results are also used in the long-term to continuously improve processes. Continuous improvement is the driving force behind everything accomplished at NADEP, and the customer satisfaction results play a major role in continuous improvement (27:3-3).

Arnold Engineering Development Center

Yes. This was well covered above in A4.

A6. Are employees trained on how to interact with customers to satisfy them?

AT&T Universal Card Services

Yes. Customer contact employees undergo a formal training and certification procedure to ensure that they are well competent at their positions. Telephone contact personnel are also put through the Telephone Associate Progression Program (TAPP) to ensure career progression and development within the Customer Services Organization. In addition, customer contact associates are offered training through the Universal Card University to complement their TAPP training (61:7-5).

The Ritz-Carlton Hotel Company

Yes. Employees undergo a series of training and certification activities (see page 8 of application summary for details) to ensure that they are able to satisfy the customers (64:8).

Federal Express Corporation

Yes. "Since front-line customer contact people exert the greatest impact on day-to-day customer satisfaction, Federal Express makes a special point of providing extensive job training to new hires in this category. Ongoing training keeps employees' skills sharp. Customer service agents complete a five-week course before fielding customer calls on their own. Subsequently, they have four hours of job training each month, and must pass a job-knowledge and skills test on CRT (soon to be interactive video) twice a year. Similarly, couriers receive twice-yearly recurrent training on customer-service and job-performance procedures" (62:20).

Aeronautical Systems Center

Not specifically. All ASC employees received general TQM training which included brief coverage of customer relationships (71:5).

Cherry Point Naval Aviation Depot

Yes. Front line employees were trained on how to interact with the customers, and in customer-vendor relationships. NADEP's Strategic Business Plan mandates that all program officers and customer service personnel receive formal instruction.

Customer liaison personnel handle external CS measurement: developed questionnaire/ personal interface methods themselves - self-trained (27:3-3).

Arnold Engineering Development Center

All AEDC employees are trained in the core values of TQM, which includes customer supplier relationships. However, it is not known if customer-contact employees receive customer interaction training.

A7.   Are the employees empowered to resolve customer problems in a timely manner?

AT&T Universal Card Services

Yes. "Empowerment is also a central them for the initial telephone contact training that our [UCS] associated receive. Our empowerment training stresses the following points:
        o Your job belongs to you,
        o You are responsible,
        o You know where you stand,
        o You have a say in how things are done,
        o Your job is part of who you are,
        o You have some control over your work." (61:7-6)

The Ritz-Carlton Hotel Company

Yes. "each individual employee can: (1) move heaven and earth to satisfy a customer; (2) contact appropriate employees to help resolve a problem swiftly (lateral service concept); (3) spend up to $2,000 in order to satisfy a guest; (4) decide the acceptability of products and services; (5) decide the business terms of a sale (sales and marketing); (6) become involved in setting the plans of their work area; (7) speak with anyone regarding any problem (64:9).

Federal Express Corporation

Yes. Federal Express invites employees to work autonomously and be self-managing and encourages risk taking (62:29).

A notable example of the empowerment of employees is in Federal Express's Billing Center. Non-management employees are authorized to resolve customer billing problems up to a $2,000 credit or refund without management approval (62:30).

Aeronautical Systems Center

"General Ferguson empowers everyone to use Total Quality principles and tools as a way of life through leadership by example" (71:8). ASC is so large and diverse that local CS actions, approaches, etc. vary considerably and it is thus hard to say whether everyone is empowered to resolve customer problems in a timely manner. However, as a military organization, timely resolution of problems is the expected norm, not the exception (71:14,17).

Cherry Point Naval Aviation Depot

Yes. All program officers and customer service employees have the authority, within certain limits, to handle resolution of customer problems, ranging from reinduction of aircraft to initiating corrective action, process improvements, and specification changes (27:3-3).

Arnold Engineering Development Center

Yes. On the spot in many cases during tests. "If it can be done by individuals, we say 'Just Do It NOW!'" (65:3-4)

Section B: General Methods Questions

B1. Did you develop your own customer satisfaction measures and methods to suit your organization's needs or did you essentially copy another organization's?

AT&T Universal Card Services

UCS develops their own measures and methods. "Recognizing that customers' needs and expectations are dynamic, we began an ongoing quantitative customer satisfier research program in January 1991. This program give each functional area insight into the key drivers of customer satisfaction, account retention, and usage" (61:7-8).

Through the research, UCS had identified eight primary satisfiers which where flowed down to 18 secondary satisfiers and over 100 tertiary satisfiers. "Each primary and secondary satisfier offers a relative weight that drives prioritization of continuous improvement activities" (61:7-8).

The Ritz-Carlton Hotel Company

The Ritz-Carlton developed their own customer satisfaction measures and methods. "The timely delivery of important attributes is not sufficient for most prestigious travel consumers; they seek a memorable experience (a feeling of elation from the overall experience). This emotional feeling cannot be captured by normal customer satisfaction survey systems and scales. We address this with supplemental measures" (64:14).

Federal Express Corporation

Federal express developed their own customer satisfaction measures and methods. "In June 1988, at the onset of fiscal year 1989, Federal express adopted what it saw as a more comprehensive, proactive, customer-oriented measure of overall customer satisfaction and service quality. They call it the Service Quality Indicator (SQI)" (62:55).

Aeronautical Systems Center

Some of both. Some of the SPOs (and other 2 letter offices developed their own measures and methods to suit the needs of their specific customers and situation. Others simply copied generic measures and methods (surveys) from others (basically to be in compliance with ASC requirement that all organizations must measure customer satisfaction. Again, for ASC, the answer is "it depends" (72:2).

Cherry Point Naval Aviation Depot

NADEP developed its own measures and methods to suit its needs. Initially, NADEP employed surveys because it was standard practice, but it found that surveys were not working for them. Response rate was low, and there was no control over who filled out the surveys. To counter these problems, NADEP created the Customer Liaison Office and employed telephone surveys/interaction and face-to-face meetings with the customers. Some generic or standard measures are employed in the phone surveys and face-to-face meetings, but customer unique measures are also used (69).

Arnold Engineering Development Center

AEDC developed its own measures and methods with input from its customers. First, AEDC developed a list of characteristics and objectives that it felt was important to its customers. This list was then provided to some of the Center's customers for comment. The customers reviewed the list and provided feedback as to what they felt should be added or deleted and also assigned relative importance values for each performance characteristic and objective. This final list of mutually understood performance characteristics and objectives was then used to develop the external customer survey. A copy of this survey is found in Appendix B (67:1).

B2. Do you tailor these methods for each type of customer?

AT&T Universal Card Services

No evidence of tailoring survey instruments for each type of customer was provided. However, the customer satisfaction data are separated according to the different customer segments (61:7-8).

The Ritz-Carlton Hotel Company

No evidence of tailoring survey instruments for each type of customer was provided. However, the analysis of the customer satisfaction data is separated into major customer segments and product lines (64:14).

Federal Express Corporation

Yes. Federal Express has developed several different customer satisfaction research methods for each customer niche. In addition to indirect measurement methods for measuring customer satisfaction, Federal Express has six survey tools for different types of customers: the customer satisfaction study, the targeted customer satisfaction studies, Federal express Center comment cards, customer automation studies, and the Canadian customer study (62:61-63).

Aeronautical Systems Center

Yes and no. Some of the offices or 2-letters have tailored methods to the customer primarily because they only have one or only a few major customers. However, "functional organizations tend to develop instruments to match each product or service to the customer" (72:2). In other words, some of the functional organizations use the same survey for all of the SPOs (72:2).

Cherry Point Naval Aviation Depot

Yes. The face-to-face meetings with customers are tailored for each customer. The phone surveys/interaction are also tailored. The independent survey, implemented by the parent organization, NAVAIR, is not tailored at all (69).

Arnold Engineering Development Center

No. Because the survey was developed with feedback from AEDC's customers, AEDC does not feel the need to tailor the survey because it already reflects the measures that are important to the customers (67:1).

B3.   What method(s) do you use to measure customer satisfaction?

AT&T Universal Card Services

Telephone interviews, performance based measurement, complaint handling, telephone contact monitoring (reminiscent of the anonymous shopper approach), customer retention studies, and account retention interviews through the "Save the Account Team" (61:6-1,7-2).

The Ritz-Carlton Hotel Company

Third party surveys, market research (account retention), and complaint/request handling (64:14-15).

Federal Express Corporation

Telephone interviews, performance based measures, comment cards, and complaint handling (62:53,56,60).

Aeronautical Systems Center

Surveys, questionnaires, and over-the-phone "how am I doing?" interaction as well as face-to-face meetings periodically. It varies widely throughout the organization for reasons discussed above. Again, the answer is it depends. There are several different methods in use at ASC because of the diversity of the organization. Many use written surveys and almost all use performance measures (indirect

methods) which are related to customer satisfaction. The different organizations within ASC use what methods they feel are appropriate to their situation (71:11; 72:1,2).

Cherry Point Naval Aviation Depot

Direct telephone contact and face to face meetings at least twice a year: open 2-way communication. NADEP also use the Quality Deficiency Reporting & Aircraft Discrepancy Reporting Programs (surveys??). A simple questionnaire is used in face-to-face meetings. The parent organization, NAVAIR, uses an independent written survey instrument quarterly. Indirect methods are also used in the form of performance measures related to customer satisfaction such as schedule compliance and cost (27:3-3; 69).

Arnold Engineering Development Center

AEDC uses both direct and indirect methods. Written surveys are used for both internal and external customers. Performance measures directly related to customer satisfaction are also used (65:4-1; 66; 67:1).

B4. Do you use more than one method to measure customer satisfaction? If so, how are the results of the methods compared to each other?

AT&T Universal Card Services

Yes. There was no evidence that a formal procedure for comparing the results of the different methods beyond the fact that all the sources of data were analyzed by the Customer Listening Post team (61:7-2).

The Ritz-Carlton Hotel Company

Yes. There is no evidence that a formal procedure for comparing the results of the different methods exist.

Federal Express Corporation

Yes. There is no evidence that a formal procedure for comparing the results of the different methods exist.

Aeronautical Systems Center

Yes. Both direct and indirect methods are employed. The results from indirect methods (performance measures) are compared to the direct methods in some

cases. No specific information gathered on what all of the methods used in ASC are or how comparisons are done (71:11,13; 72:1).

Cherry Point Naval Aviation Depot

Yes. Both direct and indirect methods are employed. Direct methods include telephone surveys/interaction, face-to-face meetings, and written surveys. Indirect methods include performance measures related to customer satisfaction (cost and schedule, quality index). No information was gathered on how the two measures are compared (27:3-3).

Arnold Engineering Development Center

Yes. Both direct and indirect methods are employed. The direct method used is written surveys. The indirect method used is performance measures directly related to customer satisfaction. The results of four critical performance measures are directly compared to the results from the written surveys to assess how well they agree and what links may exist between the two. This analysis is used to identify areas for continuos improvement (67:2).

B5. Do you determine the validity of these measures? If so, how (compare with return business?)?

AT&T Universal Card Services

Yes. UCS conducts studies to not only determine the validity of customer satisfaction measures, but also develop weights for each branch of satisfiers to guide the prioritization of improvement efforts (61:7-1).

The Ritz-Carlton Hotel Company

No evidence was provided to answer this question.

Federal Express Corporation

Federal Express does not provide evidence that they have an ongoing activity to determine the validity of their customer satisfaction measures. However, Federal Express went through an extensive customer satisfaction research effort to develop a validated set of customer satisfaction performance measures - the Service Quality Indicators (62:54-57).

Aeronautical Systems Center

No, not really (72:3).

Cherry Point Naval Aviation Depot

Not directly. But NADEP feels the measures and methods are valid because the overall trend in customer satisfaction has increased to the point where "customers demand Cherry Point products and services above all others" (27:2-2).

Arnold Engineering Development Center

Yes. AEDC feels its measures and methods are validated through very positive customer feedback, its expanding commercial test workload, and the fact that AEDC is actually expanding and building new facilities. They are further validated by the corporate-wide buy-in for customer satisfaction in the AEDC work force and its appropriate behavior. Many long-time customers have noted the increased performance of AEDC. The new commercial test load has the potential of bringing in over $300 million in new business over the next 20 years (66:2,3).

B6.   Do you benchmark against your competition (if you have some) or against "the best" in some particular area?

AT&T Universal Card Services

Yes. UCS actively benchmarks itself against competitors (61:7-12).

The Ritz-Carlton Hotel Company

Yes. The Ritz-Carlton does use customer satisfaction data to benchmark against competitors (64:15).

Federal Express Corporation

Yes. Federal Express uses customer satisfaction data to benchmark against competitors (63).

Aeronautical Systems Center

ASC has not yet benchmarked its customer satisfaction program or results against other military organizations that provide a similar service or against commercial industry (72:1).

Cherry Point Naval Aviation Depot

NADEP benchmarked itself against commercial aircraft maintenance organizations in terms of operational performance in 1991. The results were used in strategic planning for process improvement throughout NADEP. Customer satisfaction results, though, have not been benchmarked (27:4-2).

Arnold Engineering Development Center

AEDC has not yet benchmarked it customer satisfaction results to its competitors. AEDC does recognize, however, the potential benefits of benchmarking, and has implemented plans to benchmark not only customer satisfaction, but test facility capabilities and performance on a wide basis in the near future. Not benchmarking the customer satisfaction results against other government test facilities is partially based on a historical reluctance by the customers to compare government to government facilities or government to private facilities. Capt Phipps feels the reasons are mainly political - "there seems to be an underlying reluctance to openly compare or judge these facilities for fear that feedback could cause problems in future acquisitions or industry teaming arrangements" (66:1,2).

B7.   Are the method(s) revised and updated periodically? If not, why not?

AT&T Universal Card Services

Yes (73:25). See case study for history of changes.

The Ritz-Carlton Hotel Company

No evidence was provided to answer this question (64).

Federal Express Corporation

Federal Express has a series of ongoing market research studies whose focus changes with time (63:61). There is no evidence, however, that Federal Express has a formal procedure to revise or update their methods periodically.

Aeronautical Systems Center

No specific information on this was recorded. However, in general, some of the organizations change and update the methods and measures periodically not only as part of tailoring to the customer, but as part of continuous improvement (71).

Cherry Point Naval Aviation Depot

Yes. NADEP changed its methods when it found that surveys were not working for them. Current methods are updated periodically as part of continuous improvement and to reflect the changing needs and requirements of customers (69).

Arnold Engineering Development Center

Yes and no. Because the external customer survey and performance measures were developed with direct input from the customers, the methods reflect the customers needs, requirements, and expectations. However, AEDC did revise some of the performance measures when it found that other types of information were valuable (65:4-2).

B8.   Do you attempt to determine the repeat business intentions of the customer?

AT&T Universal Card Services

Indirectly, yes. UCS asks its customers whether or not they would recommend UCS to others (61:7-10).

The Ritz-Carlton Hotel Company

The Ritz-Carlton operates under the common assumption that customer satisfaction is synonymous with consumer loyalty. Given the proprietary nature of The Ritz-Carlton's survey instruments, we were unable to determine if UCS specifically asks the customer about their repeat business intentions. Consumer loyalty, however, is quantified through market research (64:15).

Federal Express Corporation

Federal Express operates under the common assumption that customer satisfaction is synonymous with consumer loyalty. Federal Express does not specifically ask repeat business intentions with the various survey instruments it uses (63).

Aeronautical Systems Center

No.

Cherry Point Naval Aviation Depot

Yes. The independent written survey administered by the parent organization NAVAIR, does include a repeat business intention question.

Arnold Engineering Development Center

No.

B9.   Were the data for these measures economically convenient to collect (time and resources)?

AT&T Universal Card Services

UCS did not discuss economic considerations regarding their customer satisfaction measurement methods .

The Ritz-Carlton Hotel Company

Ritz-Carlton did not discuss economic considerations regarding their customer satisfaction measurement methods .

Federal Express Corporation

Federal Express did not discuss economic considerations regarding their customer satisfaction measurement methods .

Aeronautical Systems Center

Again, the answer is it depends. According to Capt Hamner, it varies considerably from organization to organization (72:2).

Cherry Point Naval Aviation Depot

Not really. The monthly phone surveys/interaction cost is somewhat irrelevant since government organizations do not directly pay for DSN phone calls. However, the Customer Liaison Staff personally visit customers for face-to-face meetings at least once a year which can be expensive. Yet, the cost is justified by the benefits of the face-to-face interaction (69).

Arnold Engineering Development Center

Convenience of measurement is not an issue for AEDC. It feels that effective measurement requires commitment. "There's a tremendous amount of work involved and it takes time to develop an effective measurement system: (1) identifying the critical services and products you wish to measure; (2) establishing a critical few characteristics that you think are important to the customer and that will drive the desired behavior; (3) communicating and coordinating those characteristics with the customers and the work force; (4) establishing the measurement owners; (5) developing the measurement data system from input to reporting; and (6) the short-term monitoring and long-term monitoring of data points and trends to take action to actually drive customer satisfaction" (66:2). AEDC also feels that an effective customer satisfaction measurement system requires the commitment of resources of various types:

    (1) A data system with wide access
    (2) Identifying customer contact employees
    (3) Identifying customer objective owners
    (4) Developing periodic reporting and feedback reviews

(5) Communicating through periodic reports (66:2)

Overall, AEDC feels that effective customer satisfaction measurement requires commitment of time, resources, and people. However, it feels that the payoff potentially far outweighs the maintenance cost (66:2).

Section C: Direct Methods Questions

C1. Are these measures qualitative or quantitative or both?

AT&T Universal Card Services

Although UCS had not provided a sample of their survey instruments, they claim to collect quantitative customer satisfaction data (61:7-8). However, evidence they provide in their award application summary indicate that at qualitative questions are asked as well. Customers are asked to report on their level of satisfaction with several satisfier factors including clear communication, courtesy, helpfulness, knowledge, and professionalism (61:7-10 - 7-11).

The Ritz-Carlton Hotel Company

Ritz-Carlton seeks to capture and quantify the emotional feeling that cannot be captured by normal customer satisfaction surveys and scales. Consequently, Ritz-Carlton's surveys seek more than mere quantitative data (64:14).

Federal Express Corporation

Federal Express seeks both qualitative and quantitative data during its surveys (74).

Aeronautical Systems Center

Many of the surveys employed by ASC organizations incorporate both quantitative and qualitative measures (68:1-8).

Cherry Point Naval Aviation Depot

The face-to-face meetings gather both qualitative and quantitative information through a questionnaire and other "tailored" questions. The independent survey administered by NAVAIR collects only qualitative information (75:1,2).

Arnold Engineering Development Center

Both the internal and external customer surveys employ both types of measures. The emphasis, however, is on quantitative measures (66:2,3).

C2. Do your customers help develop these measures? If so, how?

AT&T Universal Card Services

Yes. UCS solicits customer inputs on their needs and expectations through their customer satisfier research program which was instituted in January 1991 (61:7-8).

The Ritz-Carlton Hotel Company

No evidence was provided to answer this question.

Federal Express Corporation

Little evidence provided to answer this question.

Aeronautical Systems Center

Yes in some cases and no in others. The B-2 CARD system and the LANTIRN SPO both developed their instruments (measures and methods) with input from their customers. Other SPOs or offices developed measures without input from customers (72:2).

Cherry Point Naval Aviation Depot

Information not available.

Arnold Engineering Development Center

Yes. All of the measures employed in the surveys were developed with input from the Center's customers (66:1).

C3.   Do you tailor measures for each type of customer? If so, how?

AT&T Universal Card Services

No evidence of tailoring measures for each type of customer was provided. However, the data provided by direct customer satisfaction measurement methods are analyzed along major customer segments (61:7-8).

The Ritz-Carlton Hotel Company

No evidence was provided to show that Ritz-Carlton tailors their measures, but it does tailor the data analysis (64:14).

Federal Express Corporation

Yes (63).

Aeronautical Systems Center

Yes and no. As mentioned already in C4, some of the SPOs have tailored the measures to the customer (the only customer). Data analysis is thus also tailored. Other units within ASC just use the same survey and measures for all of their customers (72:2).

Cherry Point Naval Aviation Depot

Measures are tailored in the periodic phone surveys/interaction for each individual customer. Measures (questions) beyond those listed on the questionnaire used in the face-to-face meetings are also tailored to the specific customer (69; 75:1).

Arnold Engineering Development Center

No. Measures were developed with input from the customers in the first place, and thus reflect customer requirement s and expectations. However, data analysis is tailored to each customer (66:1; 671).

C4. Do your measures support the organizations goals and objectives?

AT&T Universal Card Services

Yes.

The Ritz-Carlton Hotel Company

Yes.

Federal Express Corporation

Yes.

Aeronautical Systems Center

Yes. The measures directly support the Center's goals and objectives (72:3). This is true on a local level in many cases also.

Cherry Point Naval Aviation Depot

Yes.

Arnold Engineering Development Center

Yes. The surveys gather were developed in concert with the customers and with the Center's overall objectives and goals, which are based on the customers

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requirements and expectations (66:1). The surveys directly support the Center's goals and objectives.

C5. Do your measures allow for the statistical analysis of the data provided by these measures? If so, is statistical analysis performed?

AT&T Universal Card Services

Yes and yes. Although the data analysis is limited to reporting summary statistics and tracking trends (61:7-9).

The Ritz-Carlton Hotel Company

Yes and yes. Although, the data analysis is limited to reporting summary statistics and tracking trends (64:15).

Federal Express Corporation

Yes and yes. Although, the data analysis is limited to reporting summary statistics and tracking trends (62:62).

Aeronautical Systems Center

Yes and yes. However, analysis is limited to summary statistics (71:10; 72:1).

Cherry Point Naval Aviation Depot

No.

Arnold Engineering Development Center

Yes and yes. However, analysis is limited to summary statistics (65:4-3).

C6. Do you ask the customer what is important to him?

AT&T Universal Card Services

Yes. This is done through the customer satisfier research program aimed at identifying customer needs and expectations, but there is no evidence that this is done during customer surveys (61:7-8).

The Ritz-Carlton Hotel Company

No information was provided to answer this question.

Federal Express Corporation

Yes (74).

Aeronautical Systems Center

Yes. Several of the surveys ask the customer to rate attributes as to level of
importance (68:1-8).

Cherry Point Naval Aviation Depot

Yes and no. The independent written survey doesn't, but individual phone
surveys/interaction methods do (69; 75:1,2).

Arnold Engineering Development Center

Yes. Although the surveys do not ask the customer to rate the importance of each
attribute or measurement area, they do ask the customer to provide qualitative
feedback as to what is important to him that has not been addressed in the survey
(66:2,3).

C7.   Do these customer satisfaction measurement results feed back into unit or personnel
      performance appraisals and rewards?

AT&T Universal Card Services

No. The results reported by UCS show that survey data do not directly feed back
into unit or personnel performance appraisals and rewards. UCS asks for
customer perceptions of UCS in general rather than with individual or units within
UCS (7-10,7-12).

The Ritz-Carlton Hotel Company

No. Survey results are not formally fed back into unit or personnel performance
appraisals and rewards (64:9).

Federal Express Corporation

No. The measures used in the surveys are process oriented and are not meant to
be formally fed back into individual or unit performance appraisals and rewards
(63).

Aeronautical Systems Center

No. This is probably due to the complexity of the regulations governing civilian performance appraisals (72:3).

Cherry Point Naval Aviation Depot

Yes and no. Customer satisfaction results are not directly used in performance appraisals, but supervisors and employees negotiate merit pay system objectives and performance measures based on continuous improvement objectives (27:3-2).

Arnold Engineering Development Center

Not directly. Because there is top management commitment and corporate-wide buy-in for the customer satisfaction measurement program and the Center's customer based goals and objectives, the performance against these objectives do figure into the performance appraisals at least indirectly (67:3). However, customer satisfaction impacts the performance appraisals of the Center's contractors through award fee assessments (at least indirectly) (67:3).

C8.   How often do you measure customer satisfaction?

AT&T Universal Card Services

UCS uses several types of surveys. If a customer has contacted UCS for service, UCS solicits their feedback within 72 hours of their contact with UCS (61:7-3). For the general customer base, however, UCS seeks customer satisfaction data on a monthly basis. This data are also reported monthly on a 3-month rolling average (61:7-8).

The Ritz-Carlton Hotel Company

Customer satisfaction surveys are conducted on a quarterly basis (64:14).

Federal Express Corporation

Federal Express conducts several customer satisfaction surveys with varying interoccurrence times ranging from daily to yearly (62:60-63).

Aeronautical Systems Center

Biannually in most cases or immediately after providing infrequent or one-time only services (72:3).

Cherry Point Naval Aviation Depot

Telephone surveys/interaction is done monthly. Face-to-face meetings are done once a year. The independent surveys are implemented quarterly (27:3-3; 69; 75:2).

Arnold Engineering Development Center

Surveys are implemented immediately following the conclusion of a test, or periodically during long-term test programs (65:4-2).

C9.   Are attempts made to minimize the response burden on the customer?

AT&T Universal Card Services

No discussion of attempts to minimize the response burden on customers was provided.

The Ritz-Carlton Hotel Company

No discussion of this issue was provided.

Federal Express Corporation

Yes. Federal Express conducts surveys with an average time of 9 minutes (63).

Aeronautical Systems Center

Yes. Many of the surveys used at ASC are simple, and take less than five minutes to complete (68:1-8).

Cherry Point Naval Aviation Depot

Yes. The phone surveys/interaction enable quick response. The written survey is also very simple and can be completed in less than five minutes. NADEP also travels to the customer for the face-to-face meetings (69; 75:1,2).

Arnold Engineering Development Center

Yes. AEDC developed the surveys with input from the customers to intentionally keep the survey simple and focused on a few *critical* measures that are important to the customers. The surveys are simple, and take less than five minutes to complete (66:1-3).

Section D: Indirect Methods Questions

D1.   What types of measures do you use (e.g., performance based, self reports, complaints)?

AT&T Universal Card Services

UCS uses several types of indirect customer satisfaction measures. They include: performance based measures (bucket of measures), account retention, and complaints (61:5-2,6-1,7-13).

The Ritz-Carlton Hotel Company

Ritz-Carlton uses several types of indirect customer satisfaction measures. They include account retention and complaints (64:14-15).

Federal Express Corporation

Federal Express uses several types of indirect customer satisfaction measures. They include work study results, performance based measures, and complaints (62:53,55-57,63).

Aeronautical Systems Center

Performance based and complaints. However, usage varies throughout the organization. Performance based measures are most common (71:10; 72:2).

Cherry Point Naval Aviation Depot

Performance based (cost and schedule performance), and complaints (customers call POC's at NADEP when problems/concerns arise) (27:3-3; 4-5).

Arnold Engineering Development Center

Performance based metrics directly related to customer satisfaction (65:4-1).

D2.   Are these measures qualitative or quantitative or both?

AT&T Universal Card Services

Indirect measures are both qualitative and quantitative (61:5-2,6-1,7-13).

The Ritz-Carlton Hotel Company

Indirect measures are both qualitative and quantitative (64:14-15).

Federal Express Corporation

Both (62:53,55-57,63).

Aeronautical Systems Center

Both. Performance based measures tend to be quantitative and qualitative while complaints tend to be qualitative (71:10; 72:3).

Cherry Point Naval Aviation Depot

Both. Performance based measures are quantitative while complaints provide qualitative data (65:3-3, 4-5).

Arnold Engineering Development Center

Quantitative. All of the performance based measures collect quantitative data (65:4-1).

D3.   Do your customers help develop these measures? If so, how?

AT&T Universal Card Services

Yes (61:5-1).

The Ritz-Carlton Hotel Company

Not applicable to Ritz-Carlton's indirect customer satisfaction measurement methods.

Federal Express Corporation

Yes, through customer satisfaction studies in the case of Service Quality Indicators (62:55).

Aeronautical Systems Center

Yes. Customer approval of ASC metrics was obtained (71:10).

Cherry Point Naval Aviation Depot

Information not available.

Arnold Engineering Development Center

Yes. The performance metrics were developed with direct input from the customers (66:1).

D4. Do your measures support the organizations goals and objectives?

AT&T Universal Card Services

Yes (61:5-1).

The Ritz-Carlton Hotel Company

Yes. This is most observable with Ritz-Carlton's complaint handling procedure (64:5).

Federal Express Corporation

Yes, especially with performance based measures (62:56-58).

Aeronautical Systems Center

Yes.

Cherry Point Naval Aviation Depot

Yes. The performance measures directly support the organization's goals of delivering quality products on time, at the least cost (27:ii).

Arnold Engineering Development Center

Yes. There directly measure performance against the organization's goals and objectives (66:1,4).

D5. Do your measures allow for the statistical analysis of the data provided by these measures? If so, is statistical analysis performed?

AT&T Universal Card Services

Yes and yes (61:7-12 - 7-13).

The Ritz-Carlton Hotel Company

Yes and yes (64:15).

Federal Express Corporation

> Yes and yes (62:62).

Aeronautical Systems Center

> Yes and yes. Analysis consists of trend analysis, etc (71:10).

Cherry Point Naval Aviation Depot

> Yes and yes. Analysis consists of trend analysis, etc (27:4-5).

Arnold Engineering Development Center

> Yes and yes. Analysis consists of trend analysis, etc (65:4-1 - 4-3).

D6. Do these customer satisfaction measurement results feed back into unit or personnel performance appraisals and rewards?

AT&T Universal Card Services

> Yes. This is done primarily through the UCS's performance based measures (61:4-5).

The Ritz-Carlton Hotel Company

> No formal procedure exists for feeding back indirect customer satisfaction measurement results back into unit or personnel performance appraisals and rewards (64).

Federal Express Corporation

> Yes. Pay for performance is a central theme at Federal Express. Performance based measures are a key to implementing this theme (62:32,35).

Aeronautical Systems Center

> No, not directly (72:3).

Cherry Point Naval Aviation Depot

> Yes, indirectly as discussed in C8.

Arnold Engineering Development Center

Yes. Indirectly as discussed in C8.

D7.   How often do you measure customer satisfaction? Why?

AT&T Universal Card Services

Customer satisfaction is measured at various times depending on the particular method used. Through performance based measures, customer satisfaction is measured daily (61:5-2).

The Ritz-Carlton Hotel Company

Customer satisfaction is measured indirectly every day (or whenever a complaint arises) through Ritz-Carlton's complaint handling procedure (64:15).

Federal Express Corporation

Customer satisfaction is measured indirectly every day through performance based measures and complaint handling (62:56).

Aeronautical Systems Center

Biannually (72:3).

Cherry Point Naval Aviation Depot

Quarterly for the performance reports. Complaints are continuous (65:3-3;4-5).

Arnold Engineering Development Center

Performance metrics are tracked on a quarterly basis (67:2).

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13. ABSTRACT (Maximum 200 words) This research effort studied the customer satisfaction programs of six quality award winning service organizations in the military and commercial sectors. The purpose of the study was to assess the applicability of a general set of guidelines on measuring customer satisfaction for service organizations. This study discusses customer satisfaction, the importance of measuring customer satisfaction, guidelines regarding customer satisfaction, and the common practices of award winning service organizations. This study found that the common practices among service organizations provide support for the establishment of a general set of guidelines for measuring customer satisfaction. Universally applicable guidelines are listed and situationally dependent guidelines are discussed to allow customer satisfaction practitioners to rationally apply these guidelines to their organization.

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